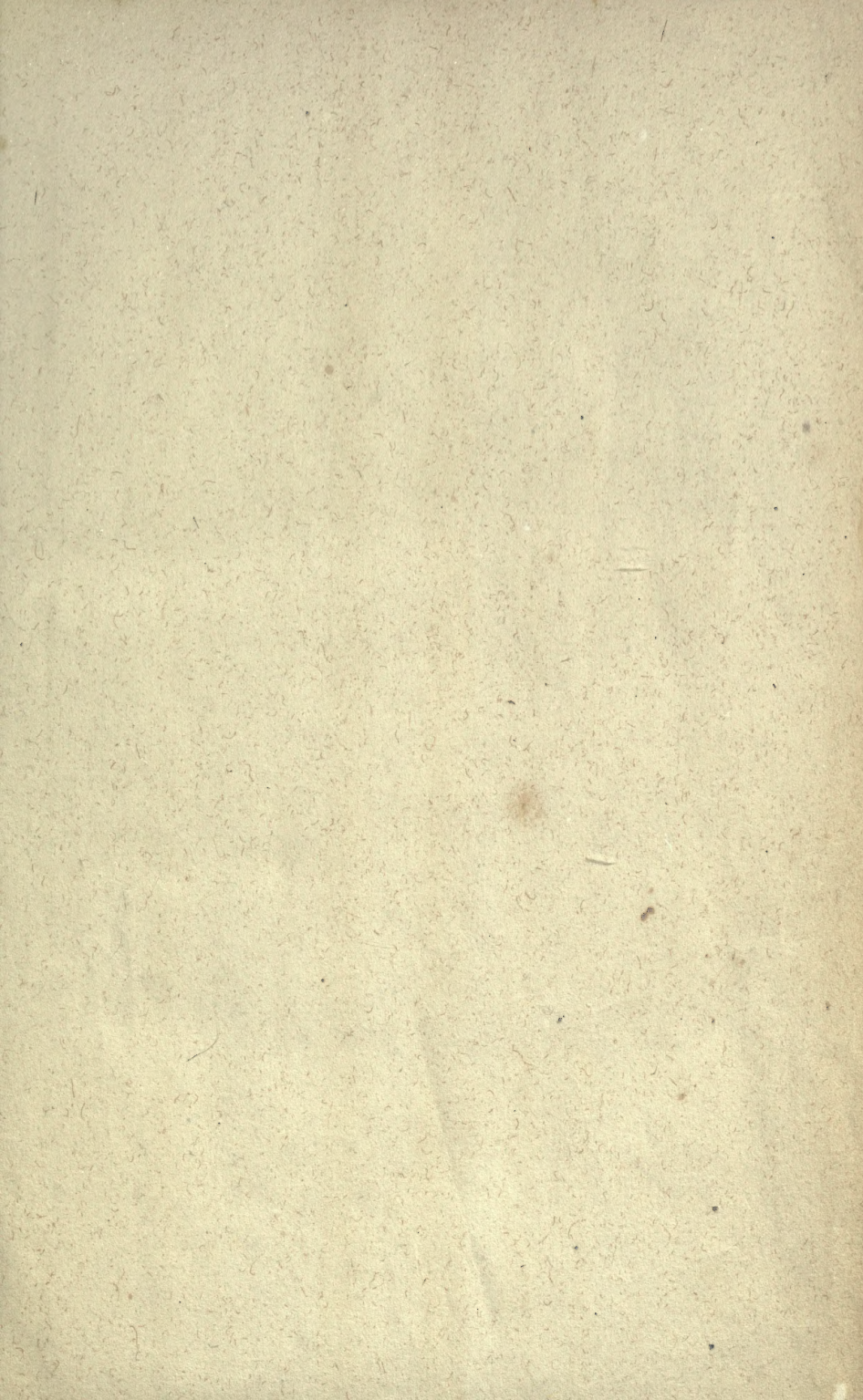


EX LIBRIS

BIOLOGY
LIBRARY

Chas. C. Smith
1879

Chas. C. Smith
MB Morris
1879









CUVIER.



The
Illustrated
NATURAL HISTORY.
Vol. II.

(New-York)
Green & Spencer.

ILLUSTRATED
NATURAL HISTORY

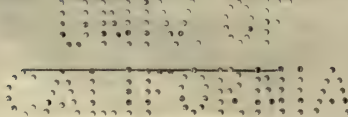
OF THE
THREE KINGDOMS,

CONTAINING
SCIENTIFIC AND POPULAR DESCRIPTIONS OF MAN, QUAD-
RUPEDS, BIRDS, FISHES, REPTILES, INSECTS, &c.

~~~~~  
EDITED AND COMPILED  
BY A. B. STRONG, M. D.,  
Author of "The American Flora"

~~~~~  
VOLUME II.

ILLUSTRATED WITH
FIFTY BEAUTIFUL ENGRAVINGS.



NEW-YORK :
GREEN & SPENCER, PUBLISHERS,
140 NASSAU-ST.

1849.

BIOLOGY
LIBRARY

J. J. Reed, Printer, 76 Spruce St.

INTRODUCTION.

WHILE every department, says Doctor Good, of nature displays an unbounded scope to the contemplative mind—a something on which it may perpetually dwell with new and growing improvement, and with new and growing delight, we behold in the great division of the animal kingdom a combination of allurements that draw us, fix us, and fascinate us, with a sort of paramount and magical captivity, unknown to either of the other branches of natural history; and which seem to render them chiefly or alone desirable and interesting, in proportion as they relate to animal life. There is, indeed, in the mineral domain, an awe, and a grandeur, and a majesty, irresistibly impressive and sublime; and that cannot fail to lift up the heart to an acknowledgment of the mighty Power which piled the massive cliffs upon each other, and rent the mountains asunder, and flung their scattered fragments over the valleys. There is in the realm of vegetables an immeasurable profusion of bounty and of beauty, of every thing that can delight the external eye, and gratify the desire,—simple, splendid, variegated, exquisite. But the moment we open the gates of the animal kingdom, a new world pours upon us, and a new train of affections takes possession of the bosom. It is here for the first time that we behold the nice lineaments of feeling and motion; we associate and sympathize with every thing around us; we insensibly acknowledge an approximation to our own nature, and

run over with avidity the vast volume that lies before us, of tastes and customs, and manners, and propensities, and passions, and consummate instinct. Few studies can be more attractive and more beneficial, to the youthful mind, than the study of Natural History : for the study of it will impress upon the mind the incontrovertible fact, that nothing is low, nothing little, nothing in itself unworthy, in the eyes of the great Creator ; that nothing lies beyond the reach of His benevolence, or the shadow of his protection. God alike finds every living creature food, in rocks, and in wildernesses, in the bowels of the earth, and in the depth of the ocean.—He gives reason where reason is wanted, instinct where instinct is wanted, cunning where cunning is found necessary, and wariness where wariness is demanded. He has furnished rapidity of foot, or fin, or wing, where such qualities appear expedient ; and where might is of moment, he has given it the most terrible. To examine all their qualities and to impress them indelibly upon the youthful mind, is the design of the following pages. We wish to lead the mind from fancy to realities, and restrain it from the wild vagaries of the imagination, to the contemplation of those facts as they are found all around us, that there is a Creator who makes, superintends, and controls all things as it seems best to Him. We wish to furnish the mind with that from which it can draw means of usefulness in the various departments of life, especially in that of agriculture, to which a knowledge of the animal kingdom adds very much. With these remarks we submit to the public the second volume of the “NATURAL HISTORY.”

CONTENTS OF VOLUME II

Introduction,	3
Memoir of Cuvier,	5
The Thrush and its Affinities. Plate 2,	20
The Buffalo Family. Plate 3,	24
The Horse. Plate 4,	29
The Wolf. Plate 5,	37
The Leopard. Plate 6,	51
The Pigeon. Plate 7,	59
The Bird of Paradise. Plate 8,	65
The White Urus. Plate 9,	69
The Sloth. Plate 10,	83
The Turkey. Plate 11,	92
The Lyre-Bird. Plate 12,	97
The Wild Boar. Plate 13,	101
The Beaver. Plate 14,	107
The Quail. Plate 15,	116
The Narwhal. Plate 16,	126
The Ostrich. Plate 17,	133
The Opossum. Plate 18,	143
The Hippopotamus. Plate 19,	153
The Hoopoe. Plate 20,	157
Deer Stalking in the Highlands. Plates 21 and 22,	165
The Monkeys. Plate 23,	173
The Parrot. Plate 24,	184
Anecdotes of the Bear,	193
The Fox. Plate 25,	197
Of Serpents. Plate 26,	206
The Peacock. Plate 27,	221
The Ruff and Reeve. Plate 28,	224
The Sea-Lion. Plate 29,	229
The Pangolin and Phatagin. Plate 30,	235

The Eagle. Plate 31,	239
The Swallow. Plate 32,	250
The Hedgehog. Plate 33,	261
The Kinkajou. Plate 34,	272
The Oriole. Plate 35,	277
The Lesser Red Poll. Plate 36,	286
The Black Poll Warbler. Plate 36,	289
Roosting Places of Wild Pigeons,	291
The Llama. Plate 37,	295
The Coipus. Plate 38,	301
The Trojans. Plate 39,	305
The King Bird. Plate 40,	310
The Martin, &c. Plates 41 and 42,	325
The Wattled Talegalla. Plate 43,	342
The Plover. Plate 44,	350
The Peccary. Plate 45,	357
The Platypus. Plate 46,	364
The Woodpecker. Plate 47,	370

MEMOIR OF CUVIER.

PLATE I.—CUVIER.

IN every department of Science we have occasionally seen "bright minds" appearing, which seemed as it were to have condensed the information and discoveries of their predecessors, and, by one great bound, to have left them immeasurably distant, removing a gloomy covering from some portion which at once acted as a key to the rest ; while the labors of the next half century would make little farther advance, and the facts which had been accumulating would remain to be again simultaneously employed in penetrating yet deeper into the mechanism and design of this world, and its many living inhabitants.

Until the commencement of the present century, Natural History may be said to have been the most backward of the sciences, being more cultivated by the enthusiasm of a few, than directed practically to the benefit of mankind, by its connexion with necessities, comforts or luxuries. Those sciences which had already been found of importance in the economy of man, or which could be brought to assist in the prosperity of their advocates, advanced much more rapidly, and we have examples of splendid discoveries in Medicine, Chemistry, and Astronomy. But in Natural History, though many illustrious names could be mentioned from the time of Aristotle to those of Linnæus and Buffon, forty years have scarcely elapsed, since the living works of creation were studied with a view to the relation between their internal and external organs, and the facts which had been so long in collecting were reduced to any arrangement. Linnæus and Buffon, whose works, we have endeavored to review rapidly in our former volume, were contemporary, and each in his own way as-

sisted more than any of their predecessors to give an additional zeal and zest, and practical utility, to Natural History.

The individual to whom we shall devote our present sketch, thus well compares these his forerunners in research :—" Linnæus and Buffon seem to have possessed, each in his own way, those qualities which it was impossible for the same man to combine, and all of which were necessary to give a rapid impulse to the study of nature. Both passionately fond of this science, both thirsting for fame, both indefatigable in their studies, both gifted with sensibility, lively imaginations, and elevated minds, they each started in their career armed with those resources which result from profound erudition. But each of them traced a different path for himself, according to the peculiar bent of his genius. Linnæus seized on the distinguishing characters of beings, with the most remarkable tact ; Buffon, at one glance, embraced the most distant affinities. Linnæus, exact and precise, created a language on purpose to express his ideas clearly, and at the same time concisely ; Buffon, abundant and fertile in expression, used his own words to develop the extent of his conceptions. No one ever exceeded Linnæus in impressing every one with the beauties of detail, with which the Creator has profusely enriched every thing to which he has given life ; none better than Buffon ever painted the majesty of Creation, and the imposing grandeur of the laws to which she is subjected. The former, frightened at the chaos or careless state in which his predecessors had left the history of Nature, contrived by simple methods, and short and clear definitions, to establish order in this immense labyrinth, and render a knowledge of individual beings easy of attainment ; the latter, disgusted at the dryness of antecedent writers, who, for the most part, were contented with giving exact descriptions, knew how to interest us for these objects, by the magic of his harmonious and poetical language. Sometimes the student, fatigued by the perusal of

Linnæus, reposed himself with Buffon ; but always, when deliciously excited by his enchanting descriptions, he returned to Linnæus, in order to class this beautiful imagery, feeling that, without such aid, he might only preserve a confused recollection of its subject ; and doubtless it is not the least of the merits of these two authors, thus incessantly to inspire a wish to return to each other, although this alternative seems to prove, and in fact it does prove, that in each, something was wanting." Let us now see if he who could so well compare, could mould his feelings and observations, to remedy some of the defects of these illustrious men.

GEORGE LEOPOLD CHRETIEN FREDERIC DAGOBERT CUVIER was born at Montbeliard, a town in France, on the 23d of August, 1769. His family was of Swiss descent, but in consequence of professing the reformed religion, was obliged to retire to a remote province in Germany, in which his uncle was a Lutheran clergyman. His father was an officer, in a Swiss regiment in the service of France, where he distinguished himself, and, after a faithful service of forty years, was appointed commandant of the artillery at Montbeliard, with a small pension from government. He married very late in life, and had three sons, of whom George became the eldest, a brother having died only a few months previous to his own birth. This event preyed so heavily upon the feelings of his mother, that the infant was scarcely expected to survive ; but the tender solicitude of his parents succeeded in rearing him to maturity, and the recollection of his mother's anxieties made an indelible impression on his mind. By her he was instructed in the rudiments of his education, she assisted him in his Latin lessons, superintended his geography and drawing, for both of which he showed an early predilection, and she instilled into his young mind the principles of religion, and resignation to the will of God, which he found a source of so much consolation, in the family bereavements to which he was

afterwards subjected. At the age of ten he was far advanced, and was placed at the public gymnasium, where he remained for four years, with great credit to himself and his early preceptress, bearing off the palm in his classes, and victory in his boyish sports and recreations.

His taste for Natural History was at this time shown by his selection of books from the Gymnasium. A colored copy of Gesner attracted his attention, and was eagerly looked over; and the glowing pages of Buffon delighted his fancy, while the plates made him familiar with a greater number of animals than existed at that time in the collections of his country. Little did he then imagine that one day would see him filling the place of that illustrious naturalist. Among his companions he had also instituted a juvenile academy, in which he acted as president, gave regulations, and dictated the work or subject that was to be read or discussed, and concluded the meeting with observations and his own opinion, a duty which he afterwards for many years performed with great clearness, in the more matured Academy of Paris. In this simple trait of youth was marked the ability which he afterwards so eminently possessed, of condensing any subject under discussion, and seizing only upon the important points.

The circumstances of his parents were such, that the young Cuvier could neither follow his own inclinations to study Nature, and the sciences allied to her, nor was he at liberty to choose one profession in preference to another.

The connexion of his uncle with the church allowed a hope that he might there succeed in obtaining preferment, and it was arranged that he should be placed at a free school in Tubingen, and commence his ecclesiastical studies,—when a fortunate circumstance changed the tide of his affairs, and placed him for a time in a situation, where talent would raise him, and his choice of a profession would be free.

Prince Charles of Wurtemberg, being on a visit to Montbeliard, heard from his sister high encomiums of the abilities of Cuvier; he sent for him, and pleased with his answers and performances, resolved to enrol him in the University of Stutgard at his own expense, and to place him in the Academy Caroline. At the age of fourteen, Cuvier, for the first time, left his home and mother's care, and never, writes Mrs. Lee, did he forget the three days journey from Montbeliard to Stutgard. "He was seated between the chamberlain and secretary of the Duke, both entirely unknown to him, and who spoke nothing but German the whole way, of which the poor child could not understand one word." On the 4th of May he entered the academy, and nine months after, bore off the prize for the German language from four or five hundred students.

His progress in the other branches corresponded, and he successfully devoted himself to the study of administration, which embraced the various branches of law and finance, as well as agriculture, and some departments of mechanics. The hours of relaxation were employed in the more direct study of Nature, in perusing the works of some of his illustrious predecessors, in making drawings, and in the formation of a herbarium of the plants growing in the neighborhood. In these pursuits he found a willing assistant in one of his teachers, M. Abbe, professor of Natural History, who perceived his abilities and loved to encourage them. At this Academy he finished his career with as great honors as at Montbeliard, carrying off the highest prizes, and, with one or two others of deserving abilities, having an order of Chivalry conferred upon him.

Cuvier had now completed what is generally called education. He, however, daily studied with increasing perseverance, and during his whole life never willingly lost an opportunity of acquiring what he previously did not know. Upon leaving the Academy Caroline, it had been intended that he should enter some branch of the administration, to

be procured by the interest of his benefactor. The events of the times prevented the immediate accomplishment of this object, and his pecuniary circumstances would not permit him to follow the employment of a naturalist, which, as yet, could yield him no emolument. Contrary to the opinions and advices of his companions, he determined to seek the situation of a tutor; they thought the high abilities he had already shown would be degraded, and his information thrown away; but M. Cuvier entertained a different opinion regarding the responsibility of an instructor of youth, and preferred a secluded but honorable independency—a step which he ever afterwards looked back upon with pleasure, as the means and commencement of an intercourse with those men, to whom he was indebted for the first rise in his afterwards brilliant career.

In 1788, at the age of nineteen, he received an introduction to a protestant family, residing near Caen, in Normandy, that of the Count d'Hericy, and was entrusted with the guidance of the Count's only son. Here he saw all the nobility of the surrounding country, acquired the form and manners of the best society, and became acquainted with some of the most remarkable men of his time. Nor was the maritime situation of the place without its advantages: he had facilities of examining the productions of the sea, particularly the Mollusca, which gave him new ideas, and led to the research and development of those views which he afterwards extended to the whole animal kingdom.

From Normandy he accompanied a friend to Paris.

M. Cuvier was now in Paris, where his ambition and insatiable love for research had often, in imagination, placed him; he had long desired to be in that capital, to which all Europe was already crowding, from the reputation of her schools, and where that of Natural History had been raised by the efforts of Buffon and Daubenton. Surrounded here by the savans of Paris, to whom he was well

known by his Memoirs on the Mollusca, who treated him with kindness and without jealousy, and who even now looked up with deference to his talents, he did not remain long inactive ; and, by the interest of the professors of the Jardin des Plantes, he was, soon after his arrival, appointed a member of the " Commission des Arts," and a professor in the Central School of the Pantheon.

In the same year, a new chair of Comparative Anatomy was created in the Jardin des Plantes. M. Mertrud was appointed to fill it ; but being aged and infirm, and hardly able to perform the duties, he was induced, at the request of his colleagues, to receive M. Cuvier as an assistant. Thus, in a few months after his leaving Normandy, Cuvier saw one of his most ardent desires fulfilled, and reaped some of the fruits of his previous studies. He was settled in the Garden of Plants, surrounded by all the riches of Nature which Paris could then present, his mind at ease, and occupied with his favorite pursuits, and he was conscious that he had won all honorably by his own exertions. His next desire was to show himself worthy of the confidence which had been reposed in him : he labored incessantly to complete the collection of Comparative Anatomy, which he had commenced upon the basis of a few preparations and skeletons left by Buffon ; while, at the same time, his lectures and demonstrations were already spreading his fame as a teacher widely over Europe. It was in this same year of his appointment, that he so conspicuously showed his intimate knowledge of comparative anatomy, in his memoir upon the *Megalonix* of Jefferson, which had been considered an immense carnivorous animal, the enemy of the Mastodon. Cuvier beautifully demonstrated the huge remains of this animal to belong to the family of the Sloths, pointing out their structure, and deducing his reasonings with a clearness which brought immediate conviction, without leaving room for a doubt. This was among the first of those papers wherein

he made use of the comparison of the recent with the fossil species, and which commenced a totally new era in our investigation of the structure of the world.

From this period, Cuvier gradually, but surely, rose in knowledge and in honors. The National Institute was erected, and he became one of its earliest members. Soon after, he was requested to accompany the memorable expedition to Egypt, as one of the scientific attendants; but he respectfully declined the appointment, conscious that he could do more for science at home, in examining the collections which were to be remitted, than by attempting to study amidst the turmoil of camps and war. The return of that expedition found him Secretary to the Institute—an annual office; when Napoleon, aspiring to every kind of glory, assumed the title of President, and Cuvier was thus placed in immediate contact with the First Consul. Napoleon early perceived his worth and abilities, and, upon remodelling the Colleges, and commencing the establishment of schools in the different departments of France, called in his assistance. This assistance he most willingly gave, and, though new to the task, which was one of great fatigue and difficulty, he performed it to the satisfaction of his first, as well as that of his subsequent employers, and successfully superintended the establishment of the Lyceums of Marseilles and Bordeaux, which are now Royal Colleges.

During his necessary absence from Paris upon this mission, the Institute was re-organized, and perpetual Secretaries were appointed for the several branches. M. Cuvier found himself elected to fill that office in the class of Natural Sciences, with a salary of 6000 francs. This office he held till his death; and it was his duty to draw up annually, a report of the proceedings and discoveries of the year that had passed. These were written with great clearness and impartiality, and now form a valuable record of the Natural Sciences during a period of thirty-six years.

It was in the capacity of Secretary, also, that he drew up his beautiful report upon the progress of science posterior to the year 1789, which he read with so much applause before Napoleon, in the Council of State. This was a task which required great patience and research, from the multitude of subjects which it embraced ; but he made it a complete history of the period, and the accomplishment of it in such a manner, showed how well he had employed his former years of study. He was aware himself of the magnitude of the undertaking. In a letter to M. Duvernoy, he writes : “ All labors are nearly arrested by a work demanded by the Emperor, the greater part of which has devolved upon me as Secretary to the Class (of Natural Sciences.) It is a history of the march and progress of the human mind since 1789. You may suppose to what a degree this is a complicated undertaking, respecting Natural Sciences. Thus, I have already written a volume, without having nearly reached the end ; but their history is so rich, there is such a beautiful mass of discoveries, that I have become interested in it, and work at it with pleasure.” The subject carried him through ; when once engaged, he became enthusiastic, and it now remains a memorial of his abilities and perseverance. There was yet another duty which devolved upon M. Cuvier, in his office in the Institute, that of pronouncing an eulogy upon the illustrious members after their decease—a task at once melancholy and grateful—melancholy in its recollections, that the companion in research, perhaps the intimate friend at home, had now passed from his earthly career—but grateful in the acquittal of a duty which was to place the labors, and discoveries, and virtues, of a valued associate, among the records of science. These eulogies have been collected, and published in three volumes, and form a useful and interesting companion to the annual reports of the Institute.

In 1800, he was appointed to another situation in the Jardin, upon which he resigned the chair of the Central

School of the Pantheon. M. Daubenton, the celebrated colleague of Buffon, died far advanced in years, and Cuvier was nominated his successor. His time was now sufficiently occupied ; while the emoluments arising from the different offices, rendered him independent, and he sent for his father and brother to reside with him. The former meeting with a severe accident, was not long preserved to enjoy the still rising honors of his son ; but his brother entered at once into his feelings and pursuits, and rendered him every assistance in his power. He still survives, and is well known to science by his beautiful work on the *Mammalia*.

A short while after his appointment to the chair of Daubenton, M. Cuvier married. He chose for his partner, the widow of M. Duvaucel, Fermier-General, who fell a victim to the disturbances of 1794. She proved the excellency of his choice, and secured to him domestic happiness, as far as it was in the control of an amiable temper and disposition, while her strong mental endowments rendered her a companion fitting for the mind of her husband.

His time was now exclusively spent in conducting his various researches, particularly those which related to fossil osteology, which we shall notice when speaking of his great work. The results of these researches were given in memoirs to the various societies of which he was a member, almost as soon as they were concluded, and, if collected, would form a series of volumes of great extent and interest. These studies were, however, again for some time interrupted by the commands of the Emperor. Cuvier was appointed one of the Counsellors of the Imperial University, and, as a part of the duties of this office, he was ordered to superintend the establishment of Academies in those parts of the Italian provinces which had been annexed to the French empire. He was also ordered upon a similar mission to Holland ; and in the year following, went to Rome, to organize a University there. These em-

ployments occupied much time; but he acquired information in his journeys, unconnected with the establishments of instruction. The most difficult part of his task was that which related to the Italian towns, and the University in Rome: M. Cuvier was a Protestant, and the bigotry of the schools in Italy, threw as many obstacles as they durst in the face of any encroachment upon their own methods; but the respect which he showed to every belief, where it was conscientiously exercised, oftentimes softened the prejudices which were held against him, and, by adapting his arrangements to the real necessities of the different towns, he completed his business so perfectly, that, in many instances, they were continued after the restoration of their former sovereigns.

We have now reached the period when the affairs and prosperity of his great master, and patron, were to assume a more chequered train; and nothing places the upright conduct of our naturalist, in all his political and official transactions, so high, as his constantly retaining, not only his civil appointments, but being sought to take a part in the councils of each monarch, as in their turn they succeeded to a temporary rule in France. From this it might perhaps be alleged, that he was variable in his opinions, and wavered with the feelings of the times; it was the reverse. He was a firm supporter of order and subordination, but he saw that, alone, he could do little to stem the torrent of revolutionary principles, and he hoped that his assistance and advice might palliate some of its attending miseries. His abilities were widely known, and it was known also that he would use them only and conscientiously for the good of his country. Upon the first ejection of Napoleon, Louis XVIII, continued him in his office of Counsellor, which had the same year been conferred on him by the Emperor. The return of Napoleon from Elba, for a time banished him from the Court; but he was retained in the Universities, and was consulted

and assisted in the changes which were thought necessary there ; while, after the second restoration of the Bourbons, he was actively employed in every sort of administration, connected with the Committee of the Interior, attached to the Council of State. In 1826, he officiated as one of the Presidents at the coronation of Charles X. ; and, after the last Revolution, he was not only named a Peer of France by the Citizen-King, but, at the time of his unexpected death, the appointment of President to the entire Council of State waited for the royal signature. Thus, we see his early course of study usefully brought forward ; for it must be recollected that law and administration were the branches which he entered upon from choice, in the University of Stutgard, and that the study of Nature was employed as a relaxation from his more severe legal and literary engagements. As, however, it is more with his career as a naturalist than as a statesman that we have now to deal, let us look back and trace his labors, from his appointment in the Jardin des Plantes till the second restoration of the Bourbons.

We have seen the occupations of Cuvier since the time of his arrival in Paris to the period to which we have brought down his history, to have been almost more than sufficient for any ordinary mind. The lectures which were to be delivered in his situations in the Garden, were of themselves an arduous task ; but no part of the administration to which he was attached was denied his assistance.

In 1830, he became anxious again to see England, and to trace the march which science had there made since his last visit ; his important offices in the State, were, however, a serious hindrance to this indulgence, and the ordinances which Charles X. was then passing, were looked upon by the people as so vexatious and unjust, that almost double employment was given to the ministry, to enable them to maintain order and prevent open outrage. His leave of absence was, therefore, several

times delayed ; but the general tranquility in Paris appeared so perfect, that it was at last given, and his passports signed. So much was the foresight of the statesman this time at fault, that the revolution commenced in the capital before he had been five hours absent. His anxiety for the affairs of his own country, however, prevented a long visit ; and he returned again to Paris, having been only a fortnight in England ; “and, to the happiness of those around him, M. Cuvier, found himself, even under the government of the Citizen-King, in possession of all his honors, his dignities, and his important functions.”

Even new honors awaited him ; for, by the order of Louis Philippe, he was created a peer of France ; but they did not diminish the intensity of his labors, and two volumes of his great work on Comparative Anatomy are said to have been now prepared for the press. On the 8th of May, 1832, he again opened the College of France, and gave his third course upon the history of the Natural Sciences. His concluding lecture in this course impressed every one who heard him. It was a farewell to his pupils—it was the last which he was spared to deliver as a public teacher. “He displayed,” says his eloquent eulogist, “a calmness and justness of perception, combined with a depth and seriousness of thought, which led his auditors to think of that book which speaks of the creation of all mankind. This was the result of his ideas rather than his expressions ; for every thing, in the free exposition which he made, breathed the feeling of the omnipotence of a supreme cause, and of an infinite wisdom. He seemed, as it were, by the examination of the visible world, to be led to the precincts of that which is invisible, and the examination of the creature evoked the Creator. At last these words fell from him, in which it is easy to see a presentiment : “Such, gentlemen, will be the objects of our investigation, if time, my own strength, and the state of my health, permit me to continue and finish

them. The closing scene of M. Cuvier's life, as a public teacher, appears to me to be impressed with peculiar beauty. Who could fail to be deeply affected at the last accents of so pure an intelligence, disengaged from the vanities and vexations of systems? Who could remain cold and insensible before the last look thrown on creation, by him who had revealed so many of its mysteries? After this lecture, the first symptoms of disease appeared; he felt a slight pain and numbness in his right arm, and his throat became affected. Two days after, both his arms were seized, and the power of swallowing was lost. He, nevertheless, retained all his faculties, and the power of speech; he arranged his worldly affairs, by completing his will, and sent for M. Royer, to make a note of the sums he had spent from his private funds, in various outlays upon the collections in the garden. These were attested by four witnesses, being too much paralyzed to sign the deeds. He was perfectly calm and resigned, much more so than those around him, and he permitted his intimate friends to be with him to the very last. "It was thus," writes Baron Pasquier, "that I was a witness of his dying moments." Four hours before his death, I was in that memorable cabinet where the happiest hours of his life had been spent, and where I had seen him surrounded with so much homage, enjoying his well-merited success; he caused himself to be carried thither, and wished that his last breath should be drawn there. His countenance was in a state of perfect repose, and never did his noble head appear to me more beautiful or worthy of admiration; no alteration of a too sensible or painful kind had yet taken place, only a little weakness and difficulty in supporting himself being observable. I held the hand which he had extended to me, while he said, in a voice scarcely articulate, "You see what a difference there is between the man of Tuesday and

the man of Sunday." From this time the paralysis of the nerves of volition rapidly spread, and no resources of his physicians could stay its progress. Fever commenced, the lungs became too much affected rightly to perform their functions, and he expired gradually, apparently without pain and without a struggle.

So closed the noble career of this great naturalist, deeply regretted by his relatives and nearer friends for his private virtues, and leaving Europe deprived of one of her brightest ornaments. It will be difficult indeed to find one fitted to hold, with equal candor and ability, the various offices to which he had been appointed.

Thus we have seen Baron Cuvier possessed of all the qualifications requisite for a great naturalist,—many of those which are required by a statesman, while he was also rich in the virtues which adorn the life of a good man. The union of the whole have left sufficient to constitute a lasting memorial of his great name."

THE THRUSH AND ITS AFFINITIES.

PLATE II.—THRUSH AND NEST.

With the Thrush we may rank the red-wing, the field-fare, the black-bird, the ring-ouzel, and the water-ouzel. These are the largest of the sparrow kind, and may be distinguished from all others of this class, as well by their size, which is well known, as by their bills, which are a little bending at the point; a small notch near the end of the upper chap; and the outmost toe adhering as far as the first joint of the middle toe. To this tribe may be also added the stare or starling, which, though with a flat bill, too much resembles these birds to be placed anywhere else.

The missel-thrush is distinguished from all of the kind by its superior size, being much larger than any of them. It differs scarcely in any other respect from the throstle, except that the spots on the breast are larger. It builds its nest in bushes, or on the side of some tree, as all of this kind are found to do, and lays four or five eggs in the season. Its song is very fine, which it begins in spring, sitting on the summit of a high tree. It is the largest bird of all the feathered tribe that has music in its voice; the note of all greater birds being either screaming, chattering, or croaking. It feeds on insects, holly, and mistletoe-berries; and sometimes sends forth a very disagreeable scream when frightened or disturbed.

The black-bird, which in cold countries, and particularly upon the Alps, is sometimes seen all over white, is a beautiful canorous bird, whistling all the spring and summer time with a note, at a distance, the most pleasing of all the grove. It is the deepest toned warbler of the woods; but it is rather unpleasant in a cage, being loud and deafening. It lays four or five bluish eggs, in a nest usually



TO VINH
ALPHATILO

built at the stump of some old hawthorn, well plastered on the inside with clay, straw, and hair.

Pleasing, however, as this bird may be, the blue-bird, described by Bellonius, is in every respect, far superior. This beautiful animal entirely resembles a black-bird in all but its blue color. It lives in the highest parts of the Alps, and even there chooses the most craggy rocks and the most frightful precipices for its residence. As it is rarely caught, it is in high estimation even in the countries where it breeds, but still more valuable when carried from home. It not only whistles in the most delightful manner, but speaks with an articulate distinct voice. It is so docile, and observes all things with such diligence, that though waked at midnight by any of the family, it will speak and whistle at the word of command. Its color, about the beginning of winter, from blue becomes black, which changes to its original hue on the first approaches of spring. It makes its nest in deep holes, in very high and inaccessible solitudes, and removes it not only from the accesses of man, but also hides it with surprising cunning from the shammoy and other wild beasts, that might annoy its young.

The manner of taking this beautiful bird is said to be this. The fowlers, either by chance or by lying in wait, having found out the place where it builds, take with them a strong stilt or stake, such as the climbers of rocks make use of to assist them in their ascent. With the assistance of this, they mount where an indifferent spectator would think it impossible to ascend, covering their heads at the same time to ward off any danger of the falling of pebbles or stones from above. At length, with extreme toil and danger, having arrived at the nest, they draw it up from the hole in which it is usually buried, and cherish the young with an assiduity equal to the pains they took to obtain them. It produces for the most part, five young, and never more; it seldom descends into the plain coun-

try, flies swifter than a black-bird, and uses the same food.

The field-fare and the red-wing make but a short stay in this country. With us they are insipid, tuneless birds, flying in flocks, and excessively watchful to preserve the general safety. All their season of music and pleasure is employed in the more northern climates, where they sing most delightfully, perched among the forests of maples, with which those countries abound. They build their nests in hedges; and lay six bluish-green eggs, spotted with black.

The stare, distinguishable from the rest of this tribe by the glossy green of its feathers in some lights, and the purple in others, breeds in hollow trees, eaves of houses, towers, ruins, cliffs, and often in high rocks over the sea. It lays four or five eggs of a pale greenish ash-color, and makes its nest of straw, small fibres of roots, and such like. Its voice is rougher than the rest of this kind; but what it wants in the melody of its note, it compensates by the facility with which it is taught to speak. In winter these birds assemble in vast flocks, and feed upon worms and insects. At the approach of spring they assemble in fields, as if in consultation together, and for three or four days seem to take no nourishment: the greater part leave the country; the rest breed here, and bring up their young.

To this tribe might be added above a hundred other birds of nearly the Thrush size, and living like them upon fruit and berries. Words could not afford variety enough to describe all the beautiful tints that adorn the foreign birds of the Thrush kind. The brilliant green of the emerald, the flaming red of the ruby, the purple of the amethyst, or the bright blue of the sapphire, could not, by the most artful combination, show anything so truly lively or delightful to the sight, as the feathers of the chilcoqui or the tautotal. Passing, therefore, over these beautiful, but little-known birds, I will only mention the American mock-

bird, the favorite songster of a region, where the birds excel rather in the beauty of their plumage, than the sweetness of their notes.

This valuable bird does not seem to vie with the feathered inhabitants of that country, in the beauty of its plumage, content with qualifications that endear it to mankind much more. It is but a plain bird to the eye, about the size of a Thrush, of a white and gray color, and a reddish bill. It is possessed not only of its own natural notes, which are musical and solemn, but it can assume the tone of every other animal in the wood, from the wolf to the raven. It seems even to sport itself in leading them astray. It will, at one time, allure the lesser birds with the call of their males, and then terrify them, when they have come near, with the screams of the eagle. There is no bird in the forest but it can mimic; and there is none that it has not, at times, deceived by its call. But, not like such as we usually see famed for mimicking with us, and who have no particular merit of their own, the mock-bird is ever surest to please when it is most itself. At those times it usually frequents the houses of the American planters; and, sitting all night on the chimney-top, pours forth the sweetest and the most various notes of any bird whatever. It would seem, if accounts be true, that the deficiency of most other song-birds in that country, is made up by this bird alone. They often build their nests in the fruit-trees about houses, feed upon berries and other fruits, and are easily rendered domestic.

THE BUFFALO FAMILY.

PLATE III.—BUFFALO ATTACKING THE TIGER.

Buffaloes in general, are animals of a large stature, resembling a bull, low in proportion to their bulk, and supported by strong and solid limbs. Impelled by that unerring instinct which assigns them to the fertile plains of the tropical regions, they avoid even the semblance of a mountain, and prefer the coarse herbage of the forest, or such plants as grow in swampy regions, to those of the open country. When distressed by the heat, they plunge into the water; where they swim well, or rather float, and are often seen to pass the broadest rivers without hesitation; in walking, their gait is heavy, they herd together in small flocks, and live in pairs.

Bishop Heber notices these wild animals in his coasting voyage up the Ganges. Having halted on a pleasant open shore, opposite to Putwa, he observed a large troop of Buffaloes buried in the water, and scarcely showing more than their horns and noses above the surface. But as the sun went down, they came out, sleek, black, and glossy, too wild and timorous to suffer an European to approach them, but showing no degree of fierceness.

Although the Buffalo in a domestic state is not remarkable for docility or attachment to his keeper, yet a feeling of this kind, blended no doubt with constitutional antipathy, is exemplified in an anecdote related by Mr. D. Johnson. Two bibaries, or carriers of grain and merchandise on the backs of Buffaloes, were driving a loaded string of these animals from Palamow to Chittrah. When arrived within a few miles of the latter place, a tiger seized on the man in the rear; a gullah, or herdsman, who was watching his Buffaloes while grazing, boldly ran up to the man's assistance, and cut the tiger very severely with his sword,



BUFFALOES ATTACKING A TIGER.

2359

upon which he dropped the bibarie, and seized the herdsman. The Buffaloes observing this, rushed upon the tiger, and rescued their master; they then tossed the aggressor from one to the other with their horns, and to the best of the narrator's recollection, soon destroyed him. Both the wounded men were carried to Mr. Johnson's. The bibarie recovered, but the herdsman was so severely wounded, that he died. This anecdote discovers, if not attachment, at least great antipathy and courage, and it is well known that neither the lion nor the tiger are inclined to attack these ponderous animals, whose vengeance is probably kept alive by occasional depredations upon their young. Hence Indian herdsmen do not scruple to pass the night in the most dangerous jungles, when seated on the back of some favorite Buffalo.

Their extreme hostility to red is also remarked in India; and the same antipathy prevails in Europe, as well as at the Cape. A general officer now living, relates, that while a young man, he was employed to survey some land in Hungary, and happened to use a small plain table, covered on the back with red morocco. As he walked from one station to another, he sometimes carried it with the paper against his breast, and the crimson color in front. On a sudden he perceived at a considerable distance, a herd of grazing Buffaloes throw out signs of defiance, and come down in full gallop towards him, with their tails up, and evincing the most tumultuous frenzy. Not suspecting the cause, he paused, and dropped his hand, when the whole troop immediately halted, and looked about as if at a great loss. He went on, and again unconsciously raising the table, brought the red color in sight. In a moment they set off, hurrying towards him with the greatest impetuosity, when, guessing the cause, he turned the obnoxious color towards his breast, and was suffered to proceed unmolested.

The Cape Buffalo, known among the Hottentots by the

name of *qu,'arato*, is truly a formidable and ferocious beast; bellowing tremendously, and moving with considerable swiftness, but happily so ponderous as rarely to venture up a steep acclivity, and having its sight impeded by the unusual breadth of its horns. This terrific species reside in small herds, among the brush-wood, and in the open forests of Caffraria, though occasionally uniting in droves upon the plain. Old bulls are often to be met with alone, but though they are, if possible, still fiercer than the younger, they are, perhaps, less formidable, because disinclined to exertion. Their paths may be traced in the woods, and there it is extremely dangerous to come in contact with them. Professor Thunberg gives an appalling account of the destruction of two horses by one of these fierce creatures; the rider providentially escaped unhurt, by climbing the nearest tree. The professor, himself, was driven to the same expedient, though his horse escaped, owing to the Buffalo turning into the wood. Sparman, who first described this formidable species, speaks of the dangerous hunting exploits he witnessed, in which the animals were destroyed for their skins. The hides when thus obtained, are made into shields, or cut into whips and traces, and are so hard, that a musket-ball will scarcely penetrate them, unless the lead be mixed with tin.

India and China are the native regions of another group of true Buffaloes, both wild and tame. These are the Arnee, which Baron Cuvier refers to one species, divided into more varieties, among which we recognise the gigantic or taure elephant arnee, which appears to be a rare species found only singly, or in small families, in the upper eastern provinces and forests at the foot of the Himalaya, though once known in the Rhamghur districts. This extraordinary animal is probably the same which the Mugs and Burmas designate Phang, and consider, next to the tiger, as the fiercest and most dangerous inhabitant of their

forests. A party of officers in the British cavalry, stationed to the north of Bengal, went on a three months' hunting expedition to the eastward, and destroyed in that time forty-two tigers, but only one arnee, though numerous wild Buffaloes became their prey. When the head of this specimen rested perpendicularly on the ground, it required the outstretched arm of a man to touch the points of the horns.

The other, or common arnee, is also a very large and formidable animal. The species live gregariously in woody swamps and plains, and occasionally float in considerable numbers down the Ganges, seemingly asleep, until the current lands them on some island, or beside the bank. They are said to plunge beneath the water, and to raise aquatic plants, on which they feed.

A herd of these fine creatures was observed by a column of troops some years since, while marching to Patna. On discovering the scarlet uniform of the soldiers, they threw out the usual signals of hostility, and galloped off; then suddenly wheeling round, came in a body, as if they designed to charge, and their horns overtopping their heads rendered it doubtful whether they were not mounted by some hostile force. Part of the column therefore halted and formed, and the animals, suddenly struck by the glittering of the arms, turned tumultuously round, and dashed under cover.

These anecdotes prove the skepticism of some of the Continental naturalists, respecting the existence of wild Buffaloes in India, to be entirely misplaced. In ancient days, the race was occasionally reduced to a precarious subjugation, by the order, and for the amusement of the native princes; and even now, the largest of the domestic breeds, mounted by their keepers, and brought into the arena, are urged to combat with the tiger, who is almost invariably defeated. But why upbraid the hateful cruelty which thus excites these animals to such barbarous ex-

ploits ? This favored country, with all its philanthropy, is not without numerous abettors of similar practices.

The stature of the Buffalo varies according to food and climate, but his appearance is uniformly wild and stupid. Yet still he possesses many admirable qualities. His strength is great, and he is so well adapted to the plough, as to be able to perform the work of two horses. Consequently he is employed with advantage in various kinds of labor, especially in drawing loaded wagons, though he generally declines the carrying of heavy burdens. When travelling in droves, this species keep close together, and he who chances to meet with them, may often see the driver walk from the back of one to the other, with the most perfect coolness. It is asserted, that in Italy they have recovered their native independence ; and both there and in Hungary, such as continue in a domestic state are managed by means of a ring passed through the cartilage of the nose ; in India with a rope. The former practice is very ancient, and it would seem that the Selavonians brought these ponderous animals with them to the shores of the Baltic. At least we are warranted in thinking so, from the armorial bearings of provinces and families in the north of Germany and Switzerland, unless indeed we are inclined to believe that the urus, or parent of the common ox, required to be ringed for ages, before it was subjected to the yoke.

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040



THE HORSE.

PLATE IV.—THE HORSE.

Although the native country of the horse cannot with certainty be traced, it seems probable that he was first domesticated in Egypt, but the precise period it is difficult to settle. 1920 years before the birth of Christ, when Abraham, having left Haran, in obedience to the divine command, was driven into Egypt by the famine, which raged into Canaan, Pharaoh offered him sheep and oxen, asses and camels. Horses would doubtless have been added, had they then existed, or had they been subdued in Egypt.

When, fifty years afterwards, Abraham journeyed to Mount Moriah, to offer up his only son, he rode upon an ass; which with all his wealth and power, he could scarcely have done had the horse been known.

Thirty years later, when Jacob returned to Isaac with Rachel and Leah, an account is given, of the number of oxen, sheep, camels, goats and asses, which he sent to appease the anger of Esau, but not one horse is mentioned.

It was not until twenty-four years after this, when the famine devastated Canaan, and Jacob sent into Egypt to buy corn, that horses are first heard of. "Wagons," probably carriages drawn by horses, were sent by Joseph into Canaan, to bring his father to Egypt. It would seem, however, that horses had been but lately introduced, or not used as beasts of burden, for the whole of the corn which was to be conveyed some hundred miles, and was to afford sustenance for Jacob's large household, was carried on asses.

About the year 1740 before Christ, is the period when horses appear to have been used first in Egypt. They appear, however, to have rapidly increased and spread abroad; for when the Israelites returned into Canaan,

the Canaanites went out to fight against Israel, with chariots and horsemen very many.

The horses of Arabia, and of the southern parts of Europe, are clearly derived from Egypt; but whether they were there bred, or imported from the south-western regions of Asia, or as is more probable, brought from the interior or northern coasts of Africa, cannot with certainty be determined.

BARB.

At the head of the African breeds, and, perhaps, at the head of all other breeds, may be placed the Barb, from Barbary, and particularly from Morocco and Fez, an animal remarkable for its fine and graceful action. It is rather lower than the Arabian, seldom exceeding fourteen hands and an inch. The shoulders are flat, the chest round, the joints inclined to be long, and the head particularly beautiful. The Barb is decidedly superior to the Arab in form, but has not his spirit, or speed, or countenance.

THE DONGOLA HORSE.

The kingdom of Dongola and the neighboring districts of Egypt, and Abyssinia, contain a horse not at all like any other oriental.

The Dongola horses stand full sixteen hands high, but the length of the body, from the shoulders to the quarter, is considerably less. Their form, is opposite to that of the Arabian or English thoroughbred, which are longer by some inches than they are high. Their neck is long and slender, the crest fine, and the withers sharp and high, giving a beautiful fore-hand; but the breast is too narrow, the quarters and flanks too flat, and the back *carped*. They constitute excellent war horses, from their speed, durability and size. Several of them have been lately imported into Europe, but they are little valued.

THE ARABIAN.

Going farther eastward, we arrive at Arabia, whose horses deservedly occupy the very highest rank.

There are said to be three breeds or varieties of Arabian horses: the *Altecki*, or inferior breed, on which they set little value, and which are found wild on some parts of the deserts; the *Kadischi*, literally horses of an unknown race, answering to our half breed horses—a mixed breed; and the *Kotchlani* horses whose genealogy, according to the Arab account, is known for two thousand years.

The Arabian horse would not be acknowledged by every judge to possess a perfect form; his head, however, is inimitable. The broadness and squareness of the forehead, the shortness and firmness of the muzzle, the prominence and brilliancy of the eye, the smallness of the ears, and the beautiful course of the veins, will always characterise the head of the Arabian horse.

The Barb alone excels him in noble and spirited action; and if there be defects about him, he is perfect for that for which he was designed. He presents the true combination of speed and bottom—strength enough to carry more than a light weight, and courage that would cause him to die rather than give up.

Several interesting anecdotes are related of the Arabian. A few of these may not be unacceptable to our readers. When the Arab falls from his mare, observes a writer, and is unable to rise, she will immediately stand still, and neigh until assistance arrives. If he lies down to sleep, as fatigue sometimes compels him, in the midst of the desert, she stands watchful over him, and neighs and rouses him if either man or beast approaches. An old Arab had a valuable mare that had carried him for fifteen years in many a hard fought battle, and in many a rapid,

weary march ; at length, eighty years old, and unable longer to ride her, he gave her, and a scimitar that had been his father's, to his eldest son, and told him to appreciate their value, and never lie down to rest until he had rubbed them both as bright as a looking-glass. In the first skirmish in which the young man was engaged, he was killed, and the mare fell into the hands of the enemy. When the news reached the old man, he exclaimed " that life was no longer worth preserving, for that he had lost both his son and his mare, and he grieved for one as much as the other ;" and he immediately sickened and died.

The following anecdote of the attachment of an Arab to his mare has often been told, but it comes home to the bosom of every one possessed of common feeling. " The whole stock of an Arab of the desert consisted of a mare. The French consul offered to purchase her in order to send her to his sovereign, Louis XIV. The Arab would have rejected the proposal at once with indignation and scorn ; but he was miserably poor. He had no means of supplying his most urgent wants, or procuring the barest necessities of life. Still he hesitated ; he had scarcely a rag to cover him—and his wife and his children were starving. The sum offered was great—it would provide him and his family with food for life. At length, and reluctantly, he consented. He brought the mare to the dwelling of the consul—he dismounted—he stood leaning upon her ; he looked now at the gold, and then at his favorite ; he sighed, he wept. " To whom is it," said he, " I am going to yield thee up ? To Europeans, who will tie thee close—who will beat thee—who will render thee miserable. Return with me, my beauty, my jewel, and rejoice the hearts of my children." As he pronounced the last words, he sprung upon her back, and was out of sight in a moment.

The next anecdote is scarcely less touching, and not so well known. Ibrahim, a poor but worthy Arab, unable to

pay a sum of money which he owed, was compelled to allow a merchant of Rama to become partner with him in a valuable mare. When the time came, he could not redeem his pledge to this man, and the mare was sold. Her pedigree could be traced, on the side of sire and dam, for full five hundred years. Ibrahim went frequently to Rama, to inquire after the mare: he would embrace her, wipe her eyes with his handkerchief, rub her with his shirt sleeves, and give her a thousand benedictions, during whole hours that he remained talking to her. "My eyes!" would he say to her, "my soul! my heart! must I be so unfortunate as to have thee sold to so many masters, and not keep thee myself? I am poor, my antelope! I brought thee up in my dwelling, as my child. I did never beat nor chide thee; I caressed thee in the proudest manner. God preserve thee, my beloved! Thou art beautiful, thou art sweet, thou art lovely! God defend thee from envious eyes!"

Sir John Malcolm gives two anecdotes to the same purpose, but of a more amusing nature.

"When the envoy, returning from his former mission, was encamped near Bagdad, an Arab rode a bright bay mare, of extraordinary shape and beauty, before his tent, until he attracted his attention. On being asked if he would sell her—'what will you give me?' was the reply. 'That depends upon her age; I suppose she is past five.' 'Guess again,' said he. 'Four?' 'Look at her mouth,' said the Arab, with a smile. On examination, she was found to be rising three. This, from her size and symmetry, greatly enhanced her value. The envoy said, 'I will give you fifty tomans' (a coin nearly of the value of a pound sterling). 'A little more, if you please,' said the fellow, apparently entertained. 'Eighty—a hundred.' He shook his head, and smiled. The offer at last came to two hundred tomans! 'Well,' said the Arab, 'you need not tempt me further; it is of no use. You are a rich elchee

(nobleman). You have fine horses, camels, and mules, and I am told you have loads of silver and gold. Now,' added he, 'you want my mare; but you shall not have her for all you have got.' "

THE EAST INDIA HORSE.

The horses of the East Indies are the *Toorky*, which is said to be beautiful in form, graceful in action, and docile in temper: the *Iranee*, well limbed, but ears large and loose; and deficient in spirit; the *Covakee*, patient and docile, but with an unsightly head; hardy, and calculated for long journeys, and severe service; the *Mojinniss*, spirited, beautiful, fleet, and persevering; and the *Tazsee*, hollow backed, and therefore deficient in strength; irritable in temper, yet sought after, on account of the peculiar easiness of his pace. A general remark applies to all the native horses, throughout India—that they want bone below the knee.

THE PERSIAN HORSE

Is next in estimation, and deservedly so, to the Arabian. The head is almost equally beautiful, the crupper superior. He is equal in speed, but far inferior in endurance. The whole frame is more developed than in the Arabian. They never exceed, it is said, fourteen hands, or fourteen hands and a half high, yet, certainly, in the whole, are taller than the Arabs.

THE TOORKOMAN HORSE.

Turkistan is that part of South Tartary, north east of the Caspian Sea; and has been celebrated from very early times, for producing a pure and valuable breed of horses. They are called *Toorkomans*; and are said to be preferable

even to the pure Persians for service. They are large, standing from fifteen to sixteen hands high; swift and inexhaustible under fatigue. Some of them have travelled nine hundred miles, in eleven successive days. They however are somewhat too small in the barrel; too long on the legs; occasionally ewe-necked; and always have a head out of proportion, large; yet such are the good qualities of the horse, that one of pure blood is worth two or three hundred pounds, even in that country.

THE TURKISH HORSE.

The Turkish horses are descended principally from the Arab, crossed by the Persian and certain other bloods. The body, however, is even longer than the Arabian's, and the crupper more elevated. They have contributed materially to the improvement of the English breed.

There is no creature so gentle as a Turkish horse, or more respectful to his master, or the groom that dresses him. The reason is, because they treat their horses with great lenity. This makes their horses great lovers of mankind; and they are so far from kicking, wincing, or growing untractable, by this gentle usage, that you will hardly find a masterless horse among them.

THE GERMAN HORSES

Are generally large, heavy, and slow. The Hungarian may be an exception, being lighter, speedier, and giving greater proof of Eastern blood. Every part of the continent, however, following the example of England, have been diligently engaged in the improvement of its breed; and the German and Prussian horses are now better proportioned, and have considerable endurance, but are still deficient in speed. The Prussian, German, and the greater part of the French cavalry, are procured from

Holstien. They are of a dark, glossy, bay color, with small heads, large nostrils, and full dark eyes, the fire and clearness of which seem to denote the inward spirit of the animal. They are beautiful, active, and strong.

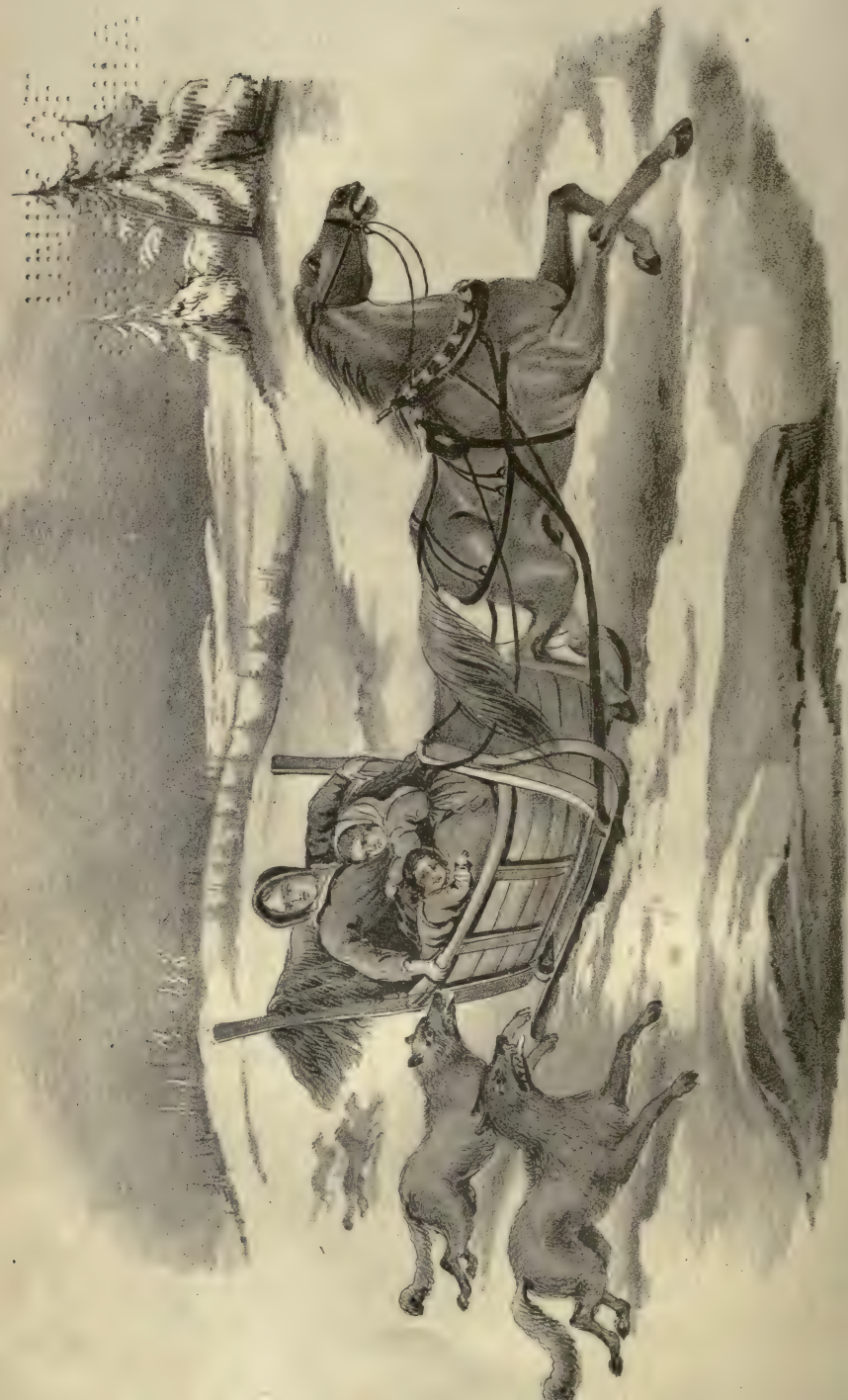
THE ENGLISH HORSE.

The earliest record of the horse in Great Britain, is contained in the history given by Julius Cæsar, of his invasion of that island. The British army was accompanied by numerous war chariots, drawn by horses. What kind of horses the Britons then possessed, it would be useless to inquire; but from the cumbrous structure of the car, and the fury with which it was driven, they must have been both active and powerful. By the introduction of the Roman cavalry, the English horse received its first cross. Several centuries passed by, and we have no record of the value or character, improvement or deterioration of the animal.

ENGLISH HORSES IN THE UNITED STATES.

The horses generally found in the United States, are descendants of English importation. Until within a few years, little attention has been paid to the raising of first rate horses. This is particularly true of New England. A deeper interest, however, is beginning to be felt on this important subject, and many valuable horses are to be found in all parts of the country. More attention has for years been paid to the rearing of good horses in Virginia, Kentucky, and other southern states. Importations of the best English blood have at different times been made, which has been diligently and purely preserved.

[illegible]



WOLVES ATTACKING A SLEIGH.

THE WOLF.

Canis Supus.—*Linnaeus.*

PLATE V.—WOLVES ATTACKING A SLEIGH.

THE Wolf is classed with the canine genus, and has so many points of resemblance with it, that some naturalists have been induced to regard him as the same animal in his untamed and natural state. This, however, is palpably a mistaken opinion—their radical differences proving them to be of different species. According to Buffon, the time of gestation in the Wolf is almost three months and a half, and in the Dog, only sixty days, which variation he considers as a proof of the real difference between the two species. No two animals can have a stronger antipathy to each other; they never meet without either flying or fighting, and the combat generally ends in the death of either one or both; if the Wolf conquer, he tears and devours his adversary; the Dog, more generous, contents himself with the victory, and leaves his enemy where he falls, equally despised and hated.

The Wolf is about three feet seven inches in length, from the tip of his nose to the insertion of his tail; and about two feet five inches high. He resembles the Dog in shape, but his head differs in figure, being long, with a pointed nose, and broader in the upper part of the face. His eyes are situated more obliquely in his head than those of the Dog, and his eye-balls are of a fiery-green color, which greatly contributes to the fierce and formidable air with which he is so strongly marked. His ears are sharp and erect, his jaws are much stronger than those of the Dog, and his teeth, which are large and sharp, and the opening of the mouth, which is shorter in proportion than that of the Dog, have a fierce and frightful appear-

ance. It is distinguished also by its superior size, stronger limbs, and more muscular body. Possessed of great strength in the muscles of his neck and jaws, he runs off with a sheep or lamb with the greatest facility. The ancients had an opinion that the neck of the Wolf was all of one solid bone; but, on the contrary, his neck is extremely flexible, being able to turn and twist it better than the Dog kind. The hair of the Wolf is long, and the color a mixture of brown, black, and gray, with a tinge of yellow; beneath the hair, he is well clothed with an ash-colored fur, which enables him, without inconvenience, to endure the severity of the climate he inhabits. In different parts of the world, however, a difference in color is exhibited. In Canada he is sometimes black; and occasionally, elsewhere, he is found almost white.

The Wolf inhabits the continents of Europe, Asia, Africa, and America; and his predominant characteristics are everywhere the same, although differing in degree. The Wolves of Senegal are much more savage as well as larger than those found in Europe; while those of North America are comparatively small; and it is said, that from those proceeded the dogs which were found there by the Europeans on their first arrival: when reclaimed, they are the dogs of the natives. Those of Egypt are also smaller, and certainly not so ferocious, for they are there taught to dance and play antics, which confer on them an imaginary value, being often sold for four or five hundred crowns.

The female Wolf produces five or six, and sometimes even nine at a litter; they are nourished with the mother's milk for some weeks; when they acquire strength, she teaches them to eat flesh, by chewing it for them; and early inures them to slaughter, by bringing birds or small animals, half dead, with which they are instructed to play, as a cat with a mouse, till at last the victims receive the *coup-de-grace*, and are devoured. The cubs seldom quit

the den till they are near two months old, nor leave their dam till they have shed their first teeth and completed the new set, which does not happen before they attain the age of ten or twelve months. The mother, now considering them sufficiently trained in the means of defence, and capable of providing for themselves, deserts them, to bring up a new family.

The Wolf, as well as all the other beasts of prey, can endure hunger a long time, though extremely voracious when he meets with food. He is naturally dull and cowardly, but being driven from the habitations of man, and obliged to live in the forest, where he finds but few animals to satisfy his rapacious appetite, he is often on the brink of starving. Impelled thus by necessity, he becomes regardless of danger, and boldly attacks those animals which are under man's protection. Lambs, sheep, and even dogs, or any animal he can carry off, are equally his prey. These depredations he renews, till having been harassed and intimidated by the dogs, he becomes prudent by experience, hides himself during the day, and only ventures out by night, when numbers of them, assembled together, prowl around the villages, destroying every creature they meet. Sheepfolds have always been devoted to scenes of his devastation and carnage; and when he perceives, by his exquisite smell, that the flocks are housed, he undermines the threshold of the door with his claws, where he enters, to the terror and destruction of the harmless fleecy tribe, displaying the most ferocious and savage cruelty, by immolating all he finds, ere he carries any off, or his thirst for blood is satiated. It is asserted, that when the Wolf has once tasted human blood, he always prefers it to any other. This prevailing notion has given rise to many superstitious stories. The old Saxons imagined it was possessed by some evil spirit, and called it the Were-Wolf, or Man-Wolf; and, to this day, the French peasants entertain similar notions.

In "*Vertigan's Antiquities*," published in the year 1634, the following passage, illustrative of these superstitions, is found:—

"The Were-Wolves," says he, "are certain sorcerers, who, having annoynted their bodies with an oyntment which they make by the instinct of the divell, and putting in a certayne inchaunted girdle, doe not only to the view of others, seeme as wolves, but to their own thinking have both the shape and nature of wolves, so long as they wear the sayd girdle; and they doe dispose themselves as very wolves, in worrying, and killing, most of human creatures. Of such, sundry have been taken, and executed in sundry parts of Germany, and the Netherlands. One Peter Stump, for being a Were-Wolf, and having killed thirteen children, two women, and one man, was at Bedlin, not farre from Cullen, in the yeere 1589, put unto a very terrible death. The flesh of divers parts of his body was pulled out with hot iron tongs, his armes, thighes, and legges broken on a wheele, and his body lastly burnt. He dyed with very great remorse, desiring that his body might not be spared from any torment, so his soule might be saved."

We have occasional accounts of the terror which this animal has excited, and of the destruction he has committed among women and children in France. To such a degree did his ravages excite terror, in 1764, that prayers are said to have been offered for his destruction. How numerous these animals were formerly in Britain, we may infer from the laws of King Edgar, who attempted to extirpate them by commuting the punishment for certain crimes into the acceptance of a number of wolves' tongues from each criminal; in Wales, by converting the tax of gold and silver into an annual tribute of three hundred wolves' heads. In succeeding times, their destruction was promoted by certain rewards; and some lands were held on condition of destroying the wolves which infested those parts of the kingdom.

Wolves, in the northern parts of the world, sometimes get on the ice of the sea, in order to prey on young seals, which they seize when asleep; but sometimes the ice, detached from the shore, carries them to a great distance from the land, and large districts have thus been cleared of these pernicious animals, which have been heard howling in a dreadful manner far in the sea.

Hunting the Wolf is a favorite diversion in all countries where he abounds; for this purpose greyhounds are used, which are let fly at him in leashes, one after another. He defends himself well, threatens them on all sides, and frequently escapes. He is also frequently taken in pitfalls, where he is so confounded, that he may be either killed or taken alive without much danger, though at other times he enjoys his senses in the highest degree of perfection. The Swedes destroy these animals by stuffing the carcase of a sheep with a species of lichen or tree-moss, (*lichen vulpinus*) which is considered a certain poison to the Wolf, and also, as the name imports, to the fox. This is said to be mixed with pounded glass, which is probably more destructive than the lichen.

The Wolf sleeps as soon as he has filled his belly, or is fatigued, and for this refreshment he prefers the day to the night; like the dog, he is easily awakened. He bears hunger better than thirst, and will live four or five days without food, provided he is well supplied with water. He is sometimes affected with madness, accompanied with symptoms similar to that of dogs; and this disease happens to him in the depth of winter, and therefore, as Mr. Pennant observes, cannot be attributed to the rage of the dog-days.

No part of the Wolf is of use, except his skin and fur; he respires a most foetid vapor; and his flesh is universally disliked. "In short, every way offensive, a savage aspect, a frightful howl, an insupportable odor, a perverse

disposition, fierce habits, he is hateful while living, and useless when dead."

The plate annexed to this article, illustrates one of those fearful scenes of ferocity and destruction in which the Wolf has borne his characteristic part. The story, as we have heard related, runs as follows: The wife of a pioneer in one of our northern settlements, started in a sleigh with her two children, on the morning of a clear wintry day, to visit the neighboring town. Expecting to reach home before nightfall, and having transacted the business which called her thither, she left the village in the afternoon, but was overtaken by a storm, and missed her way. She discovered her error when it was too late to retrace her progress, and being well acquainted with the roads, she determined to proceed in a direction different from the intended one, and which would enable her to reach her house about midnight. The way was perilous, and the storm increasing, but the stout heart of the pioneer woman was not to be daunted by any but the most fearful dangers; besides, her dearly loved offspring were with her, and she nerved herself for their protection. Gathering the reins with a firm hand, she put her horse to the top of his speed, and drove fearlessly onward. But a danger she had not contemplated, soon met her affrighted view. The wolves, famished by a severe winter, were upon her track, and their dreadful howl, like the moan of a gathering tempest, was heard in the distance on every side. They rapidly approached her;—the horse plunged forward with almost supernatural velocity, but the wolves were still more fleet than he. At length they surrounded her, with glaring eyes, and tongues protruding, eager for their prey, and the appalled and wretched woman, in the instinct of self-preservation, flung her eldest child from the sleigh, a sacrifice to the blood-thirsty pack that pursued her. For a few moments the chase was suspended; but the meal thus offered

was too scanty for their craving appetites. Again they started in full career, and the race became most terrible. The woman knew that she was nearing her home, and the swiftness of her steed, though continued for many miles, seemed to increase rather than diminish. A transient hope of escape, with her little boy, her youngest born, whom she loved more than life, arose in her bosom, and she resolved, at all events, to perish herself, if her child also could not be saved. But she hoped, and resolved in vain. The fierce herd grew near and nearer, and the woman pressed the babe to her bosom with convulsive energy ;—a wolf, outstripping the rest, sprang upon the shaft of the vehicle, and actually seized upon the child as it cowered, screaming, in its mother's arms. The latter, paralyzed with horror, relaxed her hold, and the wolf bore off his prey. In a moment more, the light of the pioneer's dwelling gleamed over the waste of snow, and the woman sank into her husband's arms ; out no light could re-illumine the brain for ever darkened by the events of that awful night. Her mind was a hopeless wreck, and she died, an idiot.

THE AMERICAN WOLF.

WE have reserved, for the conclusion of our article, a distinct notice of the Wolves of America. They are of four kinds; the common Wolf (*Canis Lupus*;) the Prairie or Barking Wolf; the Dusky, and the Black Wolf. The common Wolf is considered to be the same species as the Wolf of Europe, and in regard to habits and manners gives every evidence of such an identity. Like all the wild animals of the dog kind, they unite in packs to hunt down animals which individually they could not master, and during their sexual season, engage in the most furious combats with each other for the possession of the females. With respect to strength, fierceness and cruelty, the common Wolf of America has all the characteristics of that of Europe, in an equal degree, and what has already been said with regard to the latter, will apply equally to both.

When the Wolf has been caught in a trap, and is approached by man, it is remarked to be exceedingly cowardly, and occasionally suffers itself to be beaten without offering the slightest resistance. If a dog be set upon a wolf thus captured, the assault is patiently endured so long as his master is present; but as soon as the wolf is freed from the restraint imposed by the presence of his captor, he springs upon and throttles the dog, which, if not speedily assisted, pays the forfeit of his presumption and temerity with his life.

In the regions west of Hudson's Bay, wolves are often seen, both in the woods and on the plains, though their numbers are inconsiderable, and it is not common to see more than three or four in a pack. In the highest northern latitudes which have yet been explored, the wolves are very numerous and exceedingly audacious. They are generally to be found at no great distance from the huts of the Esquimaux, and follow these people from place to place,

being apparently very much dependent upon them for food, during the coldest season of the year. Captain Lyon relates the following singular instance of the cunning of one of the wolves which had been caught in a trap, and, after being to all appearance dead, was dragged on board the ship. "The eyes, however, were observed to wink whenever any object was placed near them; some precautions were therefore considered necessary, and the legs being tied, the animal was hoisted up with his legs downwards. He then, to our surprise, made a vigorous spring at those near him, and afterwards repeatedly turned himself upwards, so as to reach the rope by which he was suspended, endeavoring to gnaw it asunder, and making angry snaps at those who prevented him. Several heavy blows were struck on the back of his neck, and a bayonet was thrust through him, yet above a quarter of an hour elapsed before he died."

The general color of this wolf is reddish brown, but a great variety is to be observed in the coloring of the wolf as found in the northern, middle and southern regions, exhibiting various gradations, from grizzly white to pure black. He is about four feet and a half in length including the tail, which is rather more than a foot long. The height, before, is two feet three inches; behind, it is two feet four inches. The tail is bushy and bending downwards.

The American Wolf is possessed of great strength and fierceness. The great strength of its jaws, (as is the case with the common Wolf of the Old World,) enables it to carry off with facility an animal nearly as large as itself, and makes its bite exceedingly severe and dangerous. Aged or wounded individuals, as well as the hinds and fawns of the deer, sheep, lambs, calves and pigs, are killed by them, and the horse is said to be the only domestic animal which can resist them with success. They gorge with much greediness upon all sorts of carrion, which they can

discover at great distances ; and where such provision is to be obtained in great plenty, they become very fat and lose their ferocity to a singular degree. When kept in close confinement and fed upon vegetable matter, they become tame and harmless, but are very shy, restless and timid, expressing the greatest alarm at the approach of a stranger, and striving to escape from observation. The voice of this wolf is a prolonged, discordant howl, which, when uttered by numerous individuals at once, is discordant and frightful. The period of gestation, etc., in this species, is in every respect analogous to that of the common dog. They bring forth their young in burrows, and though it might be inferred that they are fiercer at those times than under ordinary circumstances, yet Hearne states that he has frequently seen the Indians take the young ones from the dens and play with them. They never hurt the young wolves, but always replace them in their dens, sometimes painting the faces of these whelps, with vermilion or red ochre.

The wolves of Florida are larger than a dog, and are perfectly black, except the females, which have a white spot on the breast, but they are not so large as the wolves of Canada and Pennsylvania, which are of a yellowish-brown color.

The Prairie, or Barking Wolf, derives his name from being found in the prairies of the west, and from resembling the dog very distinctly in his bark. They are found in large packs, following in the train of a herd of buffalo or deer, for the purpose of preying on such as may die of disease, or in consequence of wounds inflicted by the hunters. This species is remarkably sagacious and intelligent. Mr. TITIAN PEALE once attempted to take one by means of a trap, the bait of which was placed three feet above the flooring. The trap was about six feet long, and nearly the same in breadth. Notwithstanding this arrangement, a wolf actually burrowed under the flooring, and pulled

down the bait through the crevices of the floor. Traps of several other descriptions were tried without success, the wolves, in every instance, disregarding the bait unless it could be obtained without the risk of being captured by the spring. It was not until a log-trap was used that an individual of this species was caught. This log trap is made by raising one log above another at one end by means of an upright stick, which rests upon a rounded horizontal trigger on the lower log.

The Barking Wolf is about three feet and a half long ; its general color is cinereous or gray, intermingled with black, and dull fulvous or cinnamon above. The hair is of a dusky lead color at base ; of a dull cinnamon in the middle of its length, and gray or black at the tip. The face is cinnamon colored, tinted with grayish on the nose ; the lips are white, edged with black, and have three series of black bristles. Different individuals exhibit very considerable variations in coloring.

The ears are erect and rounded at tip, having the hair on the back part of a cinnamon color, and dark plumbeous at base, while that on the inside is gray. The eye-lids are edged with black ; the superior eye-lashes are black beneath, and on the superior surface of their tips. The supplemental lid is margined with black-brown before, and edged with black-brown behind. The eye is yellow, and the pupil of a black hue ; upon the lachrymal sac is a spot of black brown. The color of the head between the ears, is an intermixture of gray and dull cinnamon ; the color of the sides is paler than that of the back, and faintly banded with black above the legs, which are cinnamon-colored on the outside, and more distinctly so on the posterior hair. The tail is straight, broad, and bushy, of a gray color, mingled with cinnamon above, and black at the tip. The extremity of the trunk of the tail, reaches to the projection of the os-calcis when the leg is extended.

Many of the minute markings here given, may not be

found applicable. Mr. Say, (by whom they are given,) himself says, that other specimens which he saw, differed much from his first description: one "was destitute of the cinnamon color, except on the snout where it was but slightly apparent; the general color was therefore gray, with an intermixture of black, in remote spots and lines, varying in position and figure with the direction of the hair. Perhaps no two individuals could be found exhibiting throughout precisely the same arrangement of colored markings.

In general appearance, the barking Wolf closely resembles the domestic dog of the Indians. Like the common Wolf, the individuals of this species frequently unite to run down deer, or a buffalo calf which has been separated from the herd, though it requires the fullest exercise of all their speed, sagacity and strength, to succeed in this chase. They are very often exposed to great distress from want of food, and in this state of famine are under the necessity of filling their stomachs with wild plums or other fruits no less indigestible, in order to allay in some degree the inordinate sensations of hunger.

The peculiarity of this Wolf, is the resemblance of its bark to that of the dog. The first two or three notes are not to be distinguished from those produced by a small terrier, but differs from that dog by adding to these sounds a lengthened scream. On account of this habit of *barking*, Say has given the specific name of "*Latrans*" to this Wolf, which is used in preference to the name of "prairie," a term equally applicable to other species.

The Dusky Wolf differs but little from the foregoing, except in its color, as indicated by its name, and in being more robust in form, and fiercer and more formidable in appearance. It is found in the Missouri country. Its length from nose to tail is four feet three and a half inches.

It is distinguished from the common wolf by the length of its ears and tail, while it is separated from the barking

wolf by its greatly superior size, difference in color, &c. But little is known of the peculiar habits of this species, though there is no reason for believing that it differs much from those of its kindred species or varieties. It is remarkable for diffusing a strong disagreeable odor.

The general color of this wolf is dusky, the hair being ash-colored at base, then brownish-black, then gray, and next, black. The proportion of black upon the hairs is so considerable, as to impart a much darker color to the whole animal, than is found in the darkest of the barking wolves, but in the general effect a mottled appearance is produced by the gray of the hairs combining with the black of the tips. The gray color predominates on the lower part of the sides. The ears are short, and of a deep brownish-black, with a patch of gray hair on the anterior side within. The muzzle is blackish above, and the superior lips, anterior to the canine teeth, are gray; the same color extends from the tip of the lower jaw, in a narrow line backwards, nearly to the commencement of the neck. On the under part of the body, the color is dusky ferruginous, with long grayish hairs between the thighs, and with a large white spot on the breast. The legs are of a brownish-black, having but a slight admixture of gray hairs, except on the front ridge of the thighs, and the lower edging of the toes where the gray predominates.

The tail is short and fusiform, slightly tinged with rust color; near the base and at the tip it is black on the upper surface; the end of the tail itself, does not quite reach the os-calcis. The longer hairs of the back, particularly over the shoulders, resemble a short spare mane.

The Black Wolf has been found in Missouri and in the British possessions, and is considered by many as a different species from the Black Wolf of Europe. In general, its appearance resembles that of the common Wolf, but in size it is intermediate between it and the fox. An account is given of one of these wolves who was taken when young

and tamed, being familiar and gentle towards the family, when fed on bread and milk, but becoming ferocious when fed on meat. Its general habits and disposition are common to all of the genus.

In general appearance, and in the relative proportions of the different parts of its body, this Wolf resembles the common Wolf, (*C. Lupus*). The color of the animal is its most remarkable characteristic, as it is entirely black, without the slightest admixture of any other color.

It is not yet satisfactorily established that this wolf is precisely of the same species as the European black wolf, whose scientific name is applied to it. Desmarest is much inclined to think it a new species, and it is probable, that a close comparison of the two, will show differences between them supporting his opinion.

When the Aboriginal Americans first gave place to European adventurers, and the forests which had flourished for ages undisturbed, began to fall before the unsparing axe, the vicinity of the settler's lonely cabin resounded with the nightly howlings of wolves, attracted by the refuse provisions usually to be found there, or by a disposition to prey upon the domestic animals. During winter, when food was most difficult to be procured, packs of these famished and ferocious creatures were ever at hand, to run down and destroy any domestic animal found wandering beyond the enclosures, which their individual or combined efforts could overcome, and the boldest house-dog could not venture far from the door of his master, without incurring the risk of being killed and devoured. The common Wolf was then to be found in considerable numbers throughout a great extent, if not the whole of North America; at present, it is only known as a resident of the remote wooded and mountainous districts, where man has not fixed his abode, nor laid bare the bosom of the earth to the enlivening radiance of the sun.

1 1 1 1
2 2 2 2
3 3 3 3
4 4 4 4
5 5 5 5
6 6 6 6
7 7 7 7
8 8 8 8
9 9 9 9
10 10 10 10
11 11 11 11
12 12 12 12
13 13 13 13
14 14 14 14
15 15 15 15
16 16 16 16
17 17 17 17
18 18 18 18
19 19 19 19
20 20 20 20
21 21 21 21
22 22 22 22
23 23 23 23
24 24 24 24
25 25 25 25
26 26 26 26
27 27 27 27
28 28 28 28
29 29 29 29
30 30 30 30
31 31 31 31
32 32 32 32
33 33 33 33
34 34 34 34
35 35 35 35
36 36 36 36
37 37 37 37
38 38 38 38
39 39 39 39
40 40 40 40
41 41 41 41
42 42 42 42
43 43 43 43
44 44 44 44
45 45 45 45
46 46 46 46
47 47 47 47
48 48 48 48
49 49 49 49
50 50 50 50
51 51 51 51
52 52 52 52
53 53 53 53
54 54 54 54
55 55 55 55
56 56 56 56
57 57 57 57
58 58 58 58
59 59 59 59
60 60 60 60
61 61 61 61
62 62 62 62
63 63 63 63
64 64 64 64
65 65 65 65
66 66 66 66
67 67 67 67
68 68 68 68
69 69 69 69
70 70 70 70
71 71 71 71
72 72 72 72
73 73 73 73
74 74 74 74
75 75 75 75
76 76 76 76
77 77 77 77
78 78 78 78
79 79 79 79
80 80 80 80
81 81 81 81
82 82 82 82
83 83 83 83
84 84 84 84
85 85 85 85
86 86 86 86
87 87 87 87
88 88 88 88
89 89 89 89
90 90 90 90
91 91 91 91
92 92 92 92
93 93 93 93
94 94 94 94
95 95 95 95
96 96 96 96
97 97 97 97
98 98 98 98
99 99 99 99
100 100 100 100



THE HUNTING LEOPARD.

THE LEOPARD.

PLATE VII.—FELIS LEOPARDUS.

THE Leopard is one of the most blood-thirsty and at the same time, beautiful of the feline genus. Its predominant color is a pale yellow, thickly interspersed with spots of black, disposed in rings with great regularity on the surface of its hide. Though occasionally found in some parts of Asia, it is much more common in Africa; and is to the latter continent almost as destructive as the Tiger is to the former. It seems, however, to have more respect, dictated by fear, for the human species, and will seldom attack a man unless provoked, or much pressed by hunger, but is cruelly destructive to the inferior animal creation.

It is now generally admitted that the Leopard is a variety of the Panther species, and they are pronounced the same by the later naturalists. In times past, much difference of opinion has subsisted upon this subject, and some of the brightest names in the lists of science may be ranged in favor of the supposition that they are of different species. The Panther is the larger of the two, and in point of size ranks next to the Tiger, measuring about five or six, and, in some instances, seven feet, from the nose to the origin of the tail, and the tail itself nearly three feet. The hair is short and smooth, and the general color fine tawny yellow, thickly marked over the upper parts of the body, shoulders and thighs, with roundish black spots, disposed into circles, consisting of four or five spots, with sometimes a single dot in the middle. On the face and legs the spots are single. The breast and belly are white, the former with dusky transverse stripes, the latter, and also the tail, with large, irregular spots of black. The head is moderate in length, the ears pointed, the eyes pale yellow, and its whole aspect fierce and cruel. The Leopard

is about four feet in length from the nose to the origin of the tail, and the latter about two feet long. The predominant color is yellowish, of a paler hue than that of the Panther, and more inclining to luteous; the spots with which it is diversified are also black, and disposed in circles, but are smaller, closer, and less distinct than in the panther, and the space in the centre of the rings, formed by the disposition of the marginal series of spots, is usually plain. Both these animals abound in the interior of Africa, from Barbary to the remotest parts of Guinea, and are the scourge of every country they inhabit. The Panther, from its superior size and strength, attacks the larger quadrupeds, and is extremely destructive among the camels and horses; the Leopard commits dreadful havoc among the herds and flocks of goats, sheep, and other animals, and the different kinds of game. They frequent the banks of rivers, and take their prey by surprise, either lurking in thickets, from which they dart on them when they approach within convenient distance, or creeping on the belly till they reach their victim; and they climb trees in pursuit of monkeys and smaller animals with perfect ease.

Travellers relate that the flesh of these animals is of excellent flavor, and white as veal. The Indians and negroes eat it, but prefer that of the dog: they, however, entrap it for the sake of the flesh, as well as the skins, which latter sell for a high price. Collars, bracelets, and other ornaments composed of the teeth of these animals, also constitute an article of finery in the dress of the negro women, and are esteemed the more valuable as charms to repel the power of witchcraft.

For the purpose of taking them, it is usual for the hunter to construct a hiding place within musket-shot of a tree, on which is suspended some flesh as a bait for the unconscious beast, which receives the ball in the act of taking it. The hunter, for greater caution, then waits till

the following day, when a dog, properly trained, is sent forward to track the animal to its retreat. If it be still alive, the dog generally falls a victim, and saves the hunter from exposing himself, until he is satisfied that the beast is no longer capable of mischief.

The OUNCE of Buffon, (*Felis Uncia*), is another member of the cat tribe, and resembles the Leopard. It is probably a variety of the same species; such was the opinion of Cuvier, and it is now generally supposed that the animal, so often described under this name by travellers, is no other than the *felis jubata*. It is about three feet and a half long from the nose to the tail, strong, the back long, and the legs short. The hair is long, and of a light gray color, tinged with yellow, and paler on the breast and belly; the head is marked with small round spots, with a larger spot of black behind each ear; the back is beautifully varied with a number of oval blotches rather darker, and surrounded with a margin of black dots; the spots on the sides are more irregular, and those on the legs and sides small, scattered, and few in number; the tail is long and full of hair, and is irregularly marked with large black spots. In June, 1837, an animal answering to the OUNCE of BUFFON was brought before the notice of the Zoological Society of London, by Mr. Gray, who pronounced it a distinct species, easily known by the thickness of its fur, the paleness of its color, the irregular form of the spots, and especially by the great length and thickness of its tail.—This opinion is controverted by Cuvier, Temminck, and most succeeding authors, who regard the animal as a Leopard.

The Ounce, according to most writers, is trained to the chase, like the hunting Tiger, and the Cheetah or hunting Leopard; the *Felis Jubata* of SCHREBER, an interesting variety of the tribe.

The Cheetah is of a bright yellowish fawn color above; nearly pure white beneath; covered above and on the sides

by innumerable closely approximating spots, from half an inch to an inch in diameter, which are intensely black, and do not, as in the common Leopard and others of the spotted cats, form roses with a lighter centre, but are full and complete. These spots which are wanting on the chest and under parts of the body, are larger on the back than on the head, sides and limbs, where they are more closely set; they are also spread along the tail, forming, on the greater part of its extent, interrupted rings, which however become continuous as they approach its extremity, the three or four last rings surrounding it completely. The tip of the tail is white. The upper part of the head is of a deeper tinge; and there is a strongly marked flexuous black line, of about half an inch in breadth, extending from the inner angle of the eye, to the angle of the mouth. The extremity of the nose is black like that of a dog. It is common in India and Sumatra, as well as in Persia, and is well known both in Senegal and at the Cape of Good Hope; but the ingenuity of the savage natives of the latter countries has not, so far as we know, been exerted in rendering its services available in the chase in the manner so successfully practiced by the more refined and civilized inhabitants of Persia and Hindostan.

In the East, where these beautiful animals are employed in the chase, they are carried to the field in low cars, whereon they are chained. Each Leopard is hooded.—When the hunters come within view of a herd of Antelopes, the Leopard is unchained, his hood is removed, and the game is pointed out to him; for he is directed in the pursuit by his sight. Then he steals along cautiously and crouchingly, taking advantage of every means of making his attack, till he has approached the herd unseen, within killing distance, when he suddenly launches himself upon his quarry with five or six vigorous and rapid bounds, strangles it instantaneously, and drinks its blood. The huntsman now approaches the Leopard, caresses him, wins

him from his prey by placing the blood which he collects in a wooden ladle under the nose of the animal, or by throwing to him pieces of meat, and while he is thus kept quiet, hoods him, leads him back to the car, and there chains him. If the Leopard fails in consequence of the herd having taken timely alarm, he attempts no pursuit, but returns to his car with a dejected and mortified air.

The Leopards of this class seem to possess a much greater degree of amiability than the others, and to be entirely free from that shy and suspicious feeling of mistrust which is so strikingly displayed in the manners and motions of all the cats, and which renders them so little susceptible of real or lasting attachment. They speedily become fond of those who are kind to them, and exhibit their fondness in an open, frank, confiding manner. There can in fact, be but little doubt that they might with the greatest facility be reduced to a state of perfect domesticity, and rendered nearly as familiar and faithful as the dog himself.

Of the habits of the hunting Leopard in a state of nature, not much is known, but it may be surmised that it captures its prey much in the same way as it does when employed in the chase. A gentleman residing in India, gives the following description of a couple whom he had many opportunities of observing. "They are truly," says he, "an elegant and graceful pair, having, when led out into the court-yard in their couples, very much of the air and manners of a brace of grey hounds."

"When noticed or fondled they pur like a cat; and this is their usual mode of expressing pleasure. If, on the other hand, they are uneasy, whether that uneasiness arises from cold, from a craving after food, from a jealous apprehension of being neglected, or from any other cause, their note consists of a short uniform and repeated mew. They are extremely fond of play, and their manner of playing very much resembles that of a cat; with this difference,

however, that it never, as in the latter animal, degenerates into malicious cunning or wanton mischief."

The common Leopard is generally playful, but treacherous, and therefore difficult to tame. An interesting case, however, is related of a lady, who won the heart of a Leopard by kindness; and, by presenting him with lavender water in a card-tray, taught him to keep his claws sheathed. The luxurious animal revelled in the delicious essence almost to ecstasy; but he never was suffered to have it if he put forth his claws.

Among the larger spotted cats of the old world, we must notice the *Riman Dahan* or *Felis nebulosa* of Griffith. This species partakes, in some measure, of the markings of both the Tiger and Leopards; though it seems to be more nearly allied to the latter than to the former. Its probable size, when full grown, is about four feet from the nose to the root of the tail, which may be reckoned at three feet six inches; height at shoulder, about one foot ten inches. Color, whitish-gray, with an inclination to ashy or brownish-gray, no yellow or red tint. Stripes and spots, dark, oblong, irregular and broad on the shoulders, interrupted and angular on the sides, posterior edges of the broad spots and stripes marked by a line of deep velvet-black; limbs stout, feet and toes robust, tail very long, large, and canuiginous. Its locality is Sumatra. M. Temminck, thinks it is also found on the continent of India, having received mantles belonging to the Diakkers, made of the skin of this species. The following account is given of the manners of this species, by Sir Stamford Raffles. "Both specimens, while in a state of confinement, were remarkable for good temper and playfulness; no domestic kitten could be more so; they were always courting intercourse with persons passing by, and, in the expression of their countenance, which was always open and smiling, showed the greatest delight when noticed, throwing themselves on their backs, and delighting in being tickled and rubbed.

On board the ship, there was a small Musi dog, who used to play round the cage and with the animal, and it was amusing to observe the playfulness and tenderness with which the latter came in contact with his inferior-sized companion. When fed with a fowl that died, he seized the prey, and after sucking the blood and tearing up a little, he amused himself for hours in throwing it about, and jumping after it in the manner that a cat plays with a mouse before it is quite dead. He never seemed to look on man or children as his prey, but as companions; and the natives assert, that when wild, they live principally on poultry, birds, and the smaller kinds of deer. They are not found in numbers, and may be considered rather a rare animal, even in the Southern part of Sumatra. Both specimens were procured from the interior of Ben-coolen river. They are generally found in the vicinity of villages, and are not dreaded by the natives, except as far as they may destroy the poultry. The natives assert, that they sleep, and often wait for their prey on trees; and from this circumstance, they derive the name of *Dahan*, which signifies the fork formed by the branch of a tree, across which they are said to rest, and occasionally stretch themselves. Both specimens constantly amused themselves in frequently jumping, and clinging to the top of their cage, and throwing a somerset, or twisting themselves in the manner of a squirrel when confined, the tail being extended and showing to great advantage, when so expanded."

Having given in a former number, the natural history of the Lion, we cannot do better, than furnish at this time, a review of the entire feline genus, reserving to a future number, a more minute description of two or three species, as yet unnoticed, especially the *Jaguar* or American Panther.

"The first of this class of animals," says Goldsmith, "Is the Lion, distinguishable from all the rest by his strength, his magnitude, and his mane. The second, is

the Tiger, rather larger than the Lion, but not so tall, and known by the streaks and the vivid beauty of its robe ; including also the American Tiger or cougar, distinguishable by its size, next that of the tiger, its tawny color, and its spots. The third, is the Panther and the Leopard. The fourth, is the Ounce, not so large as any of the former, spotted like them, but distinguishable by the cream-colored ground of its hair, and the great length of its tail, being above the length of its body. The fifth, is the Catamount or Tiger Cat, less than the Ounce, but differing particularly in having a shorter tail, and being streaked down the back like a tiger. The sixth, is the short-tailed kind."

"This whole race," continues he, "may be considered as the most formidable enemy of mankind ; there are others indeed stronger, but they are gentle, and never offer injury till injured ; there are others more numerous, but they are more feeble, and rather look for safety by hiding from man than opposing him. These are the only quadrupeds that make good their ground against him, and which may be said to keep some kingdoms of the earth in their own possession. How many extensive countries are there in Africa, where the wild beasts are so numerous, that man is deterred from living amongst them, reluctantly giving up to the Lion and the Leopard extensive tracts, that seemed formed only for his delight and convenience !"



GREAT-CROWNED PIGEON.

THE PIGEON—COLUMBA.

C. Coronata.

PLATE VII.—THE GREAT CROWNED PIGEON.

THE PIGEONS, which were included by Linnæus in the single genus *Columba*, have recently been arranged under several genera, and by some ornithologists have even been formed into a separate order. The position of this group has been a subject of much dispute, some referring it to the Gallinaceous order, others to the Passerine—to both of which it in fact presents affinities. Cuvier places the Pigeons at the end of the Gallinaceous birds, and considers them as forming only a single genus, which may be divided into three sub-genera—the *Columbi-Gallinæ*; *Columbæ*, or common Pigeon, including Turtles; and the *Vinagines*, or thick-billed Pigeon.

The Pigeon is found in every quarter of the globe, from the southern boundary of ice, to the confines of the Arctic Circle. The general structure of the bill and feet being in all exceedingly characteristic, they form a well-marked family; and though separated into several sections and sub-genera, yet they all have such an affinity of form, as not easily to be mistaken. Their sizes are exceedingly various. The Goura, or Crowned Pigeon, given in the plate, measures about twenty-eight inches in length; while the Ground Dove is not larger than a Sparrow, being only six inches and a half from the furthest extremity of the bill to the point of the tail.

The Domestic Pigeon and Ring Turtle Dove have been known to mankind from the remotest period of history, and are both frequently alluded to in the Sacred Writings.

From the affectionate regard exhibited by the sexes, the ancients considered the Dove as an emblem of love, and hence it was frequently depicted as an attendant in their representations of Venus and Cupid.

Many species of this tribe are remarkable for their powers of flight; and the short space of time in which they perform long journeys, is almost incredible. To ascertain with some degree of exactness the speed of the Carrier Pigeon, a gentleman, some years ago, sent one from London by the coach to a friend at Bury St. Edmunds, desiring that it might be set at liberty two days after its arrival, precisely as the town-clock struck nine in the morning. This request was strictly attended to, and the Pigeon arrived at the Bull-Inn, in Bishopsgate-street, at half-past eleven o'clock of the same morning, having thus flown seventy-two miles in two hours and a half.

During the breeding season, Pigeons associate in pairs, and pay court to each other with their bills. Both the male and female assist in the labor of incubation. The female lays two eggs, and the young ones produced are generally a male and female; these are attended to by both the parent birds. At first they are fed with a substance resembling curd, secreted within the crop, the coating of which becomes thickened and enlarged. The process is somewhat analagous to the secretion of milk within the mammæ of quadrupeds. If the state of the crop be examined during incubation, it will be found to have a glandular and irregular appearance. Upon killing an old Pigeon, when the young are just protruding from the egg, it will be observed to have within this cavity small pieces of white curd mixed with its ordinary food of peas, barley, and other grains. It is for a short time that the young are fed with this substance; for, on the third day, it is administered along with a mixture of common food, and in eight or nine days the secretion of curd completely fails in the

old birds, from which time they are capable of ejecting common food alone. This singular disposition of nature is very remarkable, and we cannot but admire the final cause by which the Pigeon is assigned the power of casting up this curd alone, although other food be in the crop at the same time.

The plumage of nearly the whole genus is of a close texture; its tints are various, and its lustre remarkable.

The GREAT CROWNED PIGEON, (*C. Coronata*,) which we have selected as an illustration, is a splendid bird, and the largest of its tribe. Total length, 27 to 28 inches; bill, two inches long. Its head is adorned with a large, elevated, semi-circular crest of narrow, straight feathers, always erect. The crest and body below are of grayish-blue; feathers of back, scapular, and smaller wing coverts, black at the base, rich purple brown at the tips; greater coverts, same color, but centrally barred with white, forming a single transverse bar across the wings when closed; quills and tail, deep gray, the latter terminated with grayish-blue; legs, gray; tarsi, three-fourths of an inch in length, covered with rounded scales not closely set, with a white border of skin round each; toes, strong, and somewhat short.

This bird is found in many of the islands of the great Indian group; not rare in Java and Banda; abundant in New Guinea, and in most of the Moluccas. It builds in trees; lays but two eggs. The cooing of the male is hoarse, accompanied by a noise somewhat like that of a turkey-cock when strutting. Food—berries, grass, &c. Flavor of the flesh, said to be delicious. Many attempts have been made to domesticate it, but they have invariably failed.

The Pigeon is considered sacred among the lower orders in some parts of Russia; and to kill and eat it, is deemed a profanation. It is called God's bird, from the circum-

stance of the Holy Spirit assuming that form when it descended upon our Saviour. It is related by a gentleman, that, one day, having shot six pigeons, he brought them home to be made into a pie. When he threw them on the table, a Russian servant who was near, after several ejaculations against his impiety and cruelty, snatched up one of the dead birds, and bursting into tears, commenced kissing and fondling it; yet, a few days afterwards, she plucked them without displaying the least uneasiness—a thing characteristic of the people, who, for the most part, act from impulse.

Many examples are given of the amiable and affectionate character of the Domestic Pigeon, and of its interesting habits. The following curious one, related by the Rev. Mr. Adam, of England, is worth preserving:—

“About fourteen years ago,” says the owner of the bird, in a letter to the gentleman just mentioned, “the right wing of the Pigeon which you saw in our house was broken by a shot, which was the means of his coming into our possession. After recovering of his wound, he showed his courage by defeating a hawk who had the audacity to attack him, as he sat in the sill of a window. On one occasion he was sent with his mate—for we took care to furnish him with one—to the house of a gentleman in our neighborhood; and, while there, he gave many proofs of his superiority as a bird of courage, at least when opposed to others of his own species; and this superiority he maintained until his comrade fell a prey to the rats. Poor Poodle, (as we call him,) disconsolate at the loss of his spouse, now left this place for his former habitation, no doubt thinking that a change of scene might do him good; but, unable to fly, he was obliged to walk a distance of somewhat more than a quarter of a mile. Wayworn and bedaubed with mud, he trudged into the room, and emitted his wonted *coo-roo* as he took possession of his old castle,

to wit, that part of the floor in a corner, on which stands an old table, and into which he will not allow dog or cat to enter, or even to approach, without a blow of his wing or bill !

“ Next spring, finding no mate, he attached himself to a stocking-foot stuffed with straw, round which he built a nest. The year following he took up with a rabbit that used to run about the house. This animal in its pranks, with a kind of half-wicked, half-sportive design, would sometimes destroy Poodle’s nest. This was no doubt a great annoyance to the Pigeon, for it generally cost him the labor of a whole week to repair the injury done. It was curious to see how he proceeded in this operation. Having lifted a piece of twig, and placed it in the position in which he wished it to rest upon those intended to be placed under it, he perhaps found it too large ; on which he would not attempt to shorten it, for some kind of intuitive knowledge seemed to assure him, that the attempt on his part would be vain ; but laid aside the long twig for future use, and had recourse to one of smaller dimensions. While this Rabbit was his associate, he used to remind it at night that it was time to retire to rest ; if disobeyed, he gave the intimation in another form—went out from his retirement, and compelled compliance. During the day, if the Rabbit was on the floor, he used to come out, and attempt to decorate it, in which occupation he took great pleasure, especially in trimming its long ears. The Rabbit would sit still all the while, unless the Pigeon became rude, when a battle would take place. At length the Rabbit was killed, and Poodle for some time had no mate ; but, thinking it better to have a partner of any sort than none at all, he attached himself to the dog, who allowed him to perch on his back, and use any liberty short of inflicting pain. He always, however, keeps possession of his castle, which the hens, the cat, and the dog, some-

times seem inclined to enter, but from which, though age has damped his fire, he succeeds in repelling them."

In a future number, we will give the characteristics of the Cushat, the Rock-Dove, and the Turtle, as well as the classification of the different species and genera of this tribe.

[illegible]



BIRD OF PARADISE.

Paradisea.

PLATE VIII.—BIRD OF PARADISE.

THESE superb animals, scarcely equalled in beauty by any of the feathered tribe, have become the general favorites, for ornamental purposes, wherever they are known or can be obtained. In the countries which they inhabit, they are used to adorn the head-dress; and the Japanese, Chinese, and Persians, import them for the same purpose. Among the latter, the principal people attach their plumage not only to their own turbans, but to the housings and harness of their horses, and it is not long since a passion existed for them among the fair of our own country. Their superior beauty renders them interesting, and much has been done to acquire a knowledge of their habits, character, and varieties, but the search is attended with almost insurmountable difficulties. Confined almost entirely to a few islands in the Indian Ocean, and never venturing many degrees from the equator, they are not easily found alive, except by the natives of these islands; and as they cannot be preserved alive by art, we receive only their dried and mutilated skins.

It is somewhat singular that the Indian, as well as the European nations, have all designated these birds by names which imply a celestial origin; and among the former, a notion seems to have once prevailed, that they were really supernatural. In the opinion of DR. SHAW, this idea has been produced by their transcendent beauty, and the singular arrangement and delicacy of their plumage.

Naturalists differ in opinion as to the number of species into which this genus is divided. GMELIN enumerates

VIRIDIS ; Blue-green Bird of Paradise. Sea-green ; back, belly, rump, and tail, steel-blue. It is sixteen inches long.

ALBA ; White Bird. This is entirely white, and the rarest of all the species. It is found in the Papuan islands. A variety of it is black on the fore-part, and white on the hind-part.

The above comprise the different species of the Bird of Paradise, and is probably the best classification to be obtained. It belongs to the order **PICA**, and its generic characteristics are, the belt of downy feathers at the base of the bill, the long feathers at its sides, the two naked tail-feathers, and the size and strength of its feet. The colors of its plumage are very brilliant, and of every varied hue ; and the many peculiarities which add to its splendor, and give it a marked distinction from every other tribe of birds, have rendered it one of the chief ornaments of the Eastern tropics. It finds its appropriate place in that tissue of sparkling beauty which hangs like an enchanted veil over the miasma and desolation of its native clime.

1

Handwritten text in a cursive script, likely from a historical document. The text is arranged in several columns, with some lines being more prominent than others. The handwriting is dense and somewhat difficult to decipher due to the cursive style and the age of the document.



(Bull Hunt.)

Engraved by P. S. Palmer, 34, Abchurch Lane, E.C.

THE WHITE URUS.

PLATE IX.

IN the first number of volume first of this work, we introduced the subject of Cattle, which we continue in this number, by giving a description of the White Urus, (*Taurus Urus*,) and adding some very interesting accounts of Bull fights and Wild Bull hunting.

The White Urus is now only to be found in one or two parks in the north of England. This very ancient breed of cattle is generally believed to be the remains of the ancient stock of white cattle which were found on the island when the Romans first visited it, and which they represented as then running wild in the woods. The chase in which they browse, was formerly a park or forest attached to the royal castle of Cadzow. In their general habits, they resemble the fallow-deer more than any other domestic animal. Having been exposed, without shade or covering of any sort, to the rigors of our climate from time immemorial, they are exceedingly hardy; and having never been caught or subjected to the sway of man, they are necessarily peculiarly wild and untractable. Their affection for their young, like that of many other animals in a wild or half-wild state, is excessive. When dropped, they carefully conceal them among long grass or weeds in some brushwood or thicket, and approach them cautiously twice or thrice a-day, for the purpose of supplying them with the necessary nourishment. On these occasions it is dangerous to approach the place of their retreat, the parent cow being seldom at any great distance, and always attacking any person or animal approaching it with the utmost resolution and fury. The young calves, when unexpectedly approached, betray great trepidation, by throwing their ears back close upon their necks, and lying squat

down upon the ground. When hard pressed, they have been known to run at their keepers in a butting, menacing attitude, in order to force their retreat. The mode of catching the calves is to steal upon them while sleeping in their retreat, when they are a day or two old, and put a cloth over their mouths, to prevent them crying, and then carry them off to a place of safety without the reach of the herd, otherwise the cry of the calf would attract the dam, and she, by loud bellowing, would bring the whole flock to the spot, to attack the keeper in the most furious manner. These cattle are seldom seen scattering themselves indiscriminately over the pasture, like other breeds of cattle, but are generally observed to feed in a flock. They are very shy of being approached by strangers, and seem to have the power of smelling them at a great distance. When any one approaches them unexpectedly, they generally run off a little distance to the leeward, and then turn round in a body to smell him. In these gambols they invariably affect circles; and when they do make an attack—which is seldom the case—should they miss the object of their aim, they never return upon it, but run straight forward, without ever venturing to look back. The only method of slaughtering these animals is by shooting them. When the keepers approach them for this purpose, they seem perfectly aware of their danger, and always gallop away with great speed in a dense mass, preserving a profound silence, and generally keeping by the sides of the fields and fences. The cows which have young, in the mean time, forsake the flock, and repair to the places where their calves are concealed, where, with flaming eyeballs and palpitating hearts, they seem resolved to maintain their ground at all hazards. The shooters always take care to avoid these retreats. When the object of pursuit is one of the older bulls of the flock, the shooting of it is a very hazardous employment. Some of these have been known to receive as many as eleven bul-

lets, without one of them piercing their skulls. When fretted in this manner, they often become furious, and, owing to their great swiftness and prodigious strength, they are then regarded as objects of no ordinary dread.

The ancient history of this breed is involved in much mystery. From fossil remains, chiefly found in marl-pits, it appears that two species of the ox tribe formerly prevailed in Scotland, namely, the *Bos taurus* and the *Bos urus*. Some heads of these, of very large dimensions, are still preserved in the collections of the curious. Professor Fleming, of Aberdeen, says, that he has a skull of the former in his possession, measuring twenty-seven and a half inches in length, nine inches between the horns, and eleven and a half inches across at the orbits. The accounts of ancient authors certainly allude to a species of wild cattle very different in their characters and dimensions from those of the present day. The favorite haunt of these animals in ancient times, seems to have been the Caledonian Forest. This forest is described by old authors as dividing the Picts from the Scots; and, being well furnished with game, especially with fierce white bulls and kine, it was the place of both their hunting and of their greatest controversies. Some say it took its name from Calder, which signifies a *hazel*, or common nut-bush. The Roman historians delight much to talk of the furious white bulls which the Forest of Caledonia brought forth. In these early days, they are represented as of large size, and as possessing "crisp and curled manes, like fierce lions." At what period this great forest was destroyed, and the white cattle extirpated, is uncertain. The universal tradition in Clydesdale is, that they have been at Cadzow from the remotest antiquity; and the probability is, that they are a part remaining of the establishment of the ancient British and Scottish kings. At present they are objects of great curiosity, both to the inhabitants, and to strangers visiting the place. During the troubles conse-

quent on the death of Charles I., and the government of Cromwell, they were nearly extirpated. A tradition prevails in the country, that, about a hundred years ago, when it was found necessary for a time to remove them from one pasture to another, several hundred individuals, belonging to the different baronies on the ducal estate, were called out, and that they only effected their purpose with much danger and difficulty. Instances are recorded of their having been taken when young, and tamed, and even milked. The milk, like that of most white cattle, is described as thin and watery. The usual number of ribs is thirteen on each side. Some have been slaughtered with fourteen pair of ribs, but this is exceedingly rare.

The following is inserted to show in what light an animal designed by the Creator to be useful to man, is regarded by a people governed by superstition and heathenism.

“The brahminy, or sacred bull of the Hindoos, rambles about the country without interruption; he is caressed and pampered by the people, to feed him being deemed a meritorious act of religion. In many parts of Bengal, an absurd custom prevails, which frequently occasions much damage to the farmers. When a rich young man dies, and the ceremony in commemoration of ancestors has been performed, a young bull is consecrated, with much solemnity, to Siva, and married to four cows: he is then turned loose, after having been marked: he may then go where he pleases; and it is not lawful to beat him, even if he be eating a valuable crop, or enter a shop, and there devour the grain exposed for sale. The sufferers shout and make a noise, to drive him away; but he soon despises this vociferation, and eats heartily until he is satisfied. These consecrated bulls become, in consequence of these free quarters, very fat, and are fine animals to look at, but very destructive. The wives are given away to Brahmins, and he seldom sees them again. The last two

Rajahs of Dinajepoor, among other expedients which they devised with great success to ruin themselves, consecrated in this manner about two thousand cows ; and as no person presumed to molest the sacred animals, the vicinity soon became desolate, and the magistrate was at last compelled to sell them all, with the exception of one hundred, which were left to the widow to soothe her misfortune.

We think the following will not be out of place in a work of this kind. It is not introduced for the purpose of approving of this kind of savage amusement, but simply to show the mode in which it is conducted. This amusement is not confined to Spain, but has been practised in England, and is now practised in Mexico, and even in our own country. It constitutes one of the pastimes of New Orleans.

“ The excessive fondness of the Spaniards for bull-fights, is a remarkable feature in their manners, and is hostile to the feelings of other European nations, who are less familiar with such sights. The Spaniards themselves regard this practice as the means of preserving energy of character, and of habituating them to strong emotions, which are only terrible to timid minds. But although bull-fighting was formerly reckoned among the royal festivals in Spain, attempts have been made, if not entirely to abolish the entertainment, at least to diminish the number of the exhibitions.

“ These bull-fights are attended with very considerable expense, but they are also profitable to the undertakers ; for the spectators pay for admission as to any other spectacle, and the price of the best and most commodious seats is as high as a dollar. The profits which remain after defraying the expense of the horses and bulls, and the wages of the *torreadores*, or combatants, are destined to charitable purposes. In some cities the principal square is fitted up as a kind of theatre for this exhibition.

“ The spectacle begins with a kind of procession around

the square, in which the combatants, either on foot or on horseback, make their appearance : after them two officers of justice, in black robes, and of a grave deportment, advance to the president of the spectacle, and request to have an order for the entertainment to commence. A signal is then given, and the animal, which had been previously shut up in a cabin, with a door opening to the square, rushes forward, and is received by the spectators with the loudest acclamations. The *picadores*, or combatants, on horseback, dressed in the ancient Spanish manner, and armed with a long lance, begin the contest ; and if the bull, without provocation, dart upon them, a favorable opinion is entertained of his courage ; and if, after being wounded and repulsed, he return to the charge, the most enthusiastic expressions of joy are heard ; but if he is struck with terror, and seems anxious to avoid his antagonists, he is hooted and hissed by all the spectators, and loaded with reproaches and blows by those who are near him. If after all this his courage cannot be roused, large dogs are let loose against him, and after being torn and mangled, in the estimation of the Spaniards he perishes ignobly. The most animated, as well as the most bloody scene, is exhibited with the combatant on horseback ; for the irritated and wounded animal sometimes attacks and overturns both horse and rider ; and when the latter is dismounted and disarmed, he is protected from immediate danger by the combatants on foot, who endeavor to provoke and divert the bull's attention, by shaking before him pieces of cloth of different colors ; but, in attempting to save the dismounted horseman, they are themselves exposed to great hazard ; for the bull sometimes pursues them, when they escape by dropping a piece of colored stuff, against which the deceived animal exerts all his rage : or, if this resource fail, the combatant springs over a barrier six feet high, which incloses the inner part of the arena. In some places this barrier is double, form-

ing in the intermediate space a circular gallery, behind which the combatant is in safety ; but in some cases the barrier is single, and the bull succeeds in his attempt to surmount it, when an indescribable scene of consternation and confusion immediately follows, which proves fatal to many of the spectators, while the unfortunate animal falls under the blows which are levelled at him from all sides.

“ If the animal is not despatched by those on horseback, and if he seem disposed to renew the combat, they retire and give place to the *banderilleros*, who are on foot ; and, presenting themselves before the animal, the moment he darts upon them, plunge into his neck a kind of hook-darts, ornamented with small streamers of colored paper. The rage of the animal is raised to the highest pitch ; and were it not for the experience and skill of the assailants, his furious efforts would hurl destruction on their heads in a moment. The bull being exhausted with numerous wounds and loss of blood, another victim of barbarous sport is demanded ; the signal of death is given by the president, and announced by the sound of trumpets. The matador then appears in the arena, when the other combatants retire. In one hand he holds a long dagger, and with the other waves a flag before his adversary. The interest and pleasure of the spectators, which had been suspended, are again awakened ; and the matador, watching the favorable opportunity, inflicts the mortal blow ; and if the animal fall, the loudest shouts of acclamation announce the triumph of the conqueror ; but if he fail in the first attempt, a murmur of disapprobation pervades the assembly. The fallen animal is then dragged from the arena by three mules, ornamented with bells and streamers, and another is immediately introduced, to run the same course of barbarous torment. At one period, six bulls were thus sacrificed in a morning, and twelve in the afternoon, on the days appropriated to these entertainments in Madrid.”

From the following account, it would seem that in Great Britain bull-baiting has been patronised by royalty.

Queen Elizabeth, on the 25th of May, 1559, soon after her accession to the throne, gave a splendid dinner to the French ambassadors, who afterwards were entertained with the baiting of bulls and bears, and the queen herself stood with the ambassadors, looking on the pastime till six at night. The day following, the same ambassadors went by water to Paris Garden, where they saw another baiting of bulls and of bears ; and again, twenty-seven years after, Queen Elizabeth received the Danish ambassador at Greenwich, who was treated with the sight of a bear and bull-baiting, "tempered," says Holinshed, "with other merry disports ; and, for the diversion of the populace, there was a horse, with an ape upon his back, which highly pleased them, so that they expressed 'their inward-conceived joy and delight with shrill shouts and variety of gestures.' "

Bull-running at Stamford was another barbarous diversion, somewhat different from bull-fighting, and much less known. The traditionary origin of the bull-running at Stamford, and the manner in which it was performed in the seventeenth century, are given by Butcher, in his Survey of that town. "The bull-running is a sport of no pleasure, except to those who delight in beastliness and mischief ; it is performed just the day six weeks before Christmas. The butchers of the town, at their own charge, against the time provide the wildest bull they can get. This bull over night is led into some stable or barn belonging to the alderman. The next morning proclamation is made by the common bellman of the town, round about the same, that each one shut up their shop doors and gates, and that none, upon pain of imprisonment, offer to do any violence to strangers ; for the preventing whereof, the town being a great thoroughfare, and then being term-time, a guard is appointed for the passing of travellers

through the same, without hurt ; that none have any iron upon their bull-clubs, or other staff, which they pursue the bull with. Which proclamation made, and the gates all shut up, the bull is turned out of the alderman's house ; and then, hivie-skivy, tag and rag, men, women and children, of all sorts and sizes, with all the dogs in the town, promiscuously running after him with their bull-clubs, spattering dirt in each other's faces, that one would think them to be so many furies started out of hell for the punishment of Cerberus, &c. And, which is the greater shame, I have seen persons of rank and family, of both sexes, following this bulling business."

We will now close our account of cattle, by giving the following animating description of a wild bull-hunt in Spain.—(*See Plate 9.*)

The Spanish bull-fight has been often described, but that species of bull-fight which, while it affords pastime to the people, subdues the noble animal to be a partaker of the labors of the husbandman, is, we believe, little or not at all known in this country. Spain abounds with extensive forest-lands, which, though reaching over a wide extent of country, is sufficiently open to afford pasture and food to herds of wild cattle who roam almost unmolested amongst their shades. The great forest of the Alemtajo is an apt illustration. In this, some hundreds of square miles of country are occupied by growing timber ; but, within its bounds, large open spaces exist, which serve for pasturages, and occasionally a farm, a vineyard, or an olive-grove may be seen struggling, as it were, for existence amidst the vast solitudes. But though occasional glimpses of culture appear, they are far too "few and far between" to offer any serious check to the increase and independence of the herds which roam around them undisturbed. It was in this forest that I witnessed for the first time the method of capturing the wild bulls. I had received intimation that the village of Alcoxete, on the

Tagus, was to be the scene of a bull-fight, and that the villagers for many miles round were invited to join in the hunt, which was to take place on the following day. I accordingly crossed the river in company of about twenty persons, mostly military, each being provided with a long pole, having a small spike fixed in one end, and mounted as inclination or ability suited. When we arrived on the opposite bank, a little before day-break, we found about 250 or 300 persons assembled, some mounted on different sorts of quadrupeds, from the noble Andalusian horse to the humble hack donkey, and very many on foot. They were all armed in a similar manner to ourselves. As soon as daylight began to appear, we all marched off towards the forest. The morning was peculiarly fine, and the interest of the beautiful scenery was heightened by the varied costumes of the persons by whom we were surrounded. As soon as we had advanced some distance into the wood, we halted for the purpose of refreshment, before the arduous and somewhat perilous duties of the day began. After a hasty meal, we divided into two parties—one stretching in a long line to the right, and the other to the left. We had not advanced far in this manner before we fell in with a herd of cattle having twelve bulls with it—which no sooner descried us than they bounded off with the speed of lightning. The sport had now begun; we put our horses to the utmost speed, threading our way amongst the tall pine-trees as well as we could, and endeavoring by wild cries to drive the bulls towards the other party. At length, after about an hour's chase, some half-dozen of us who were better mounted than the rest, came up with them, and commenced the attack with our long poles. The manner was this: one person riding at full speed gave the bull nearest him a sharp prick with the goad, which it no sooner felt than it turned upon its assailant and gave chase; another horseman coming up, attacked it on the other side, when, leaving the first assailant, it

turned upon the second ; he in like manner was rescued by a third, and so on. The attention of the infuriated animal thus distracted, prevented his escape, and gave time for the other hunters to come up. The bulls were thus at length separated from the herd. A sufficient number having arrived to form a circle round them, we commenced operations for the purpose of driving them towards the town. All the skill of the riders was now necessary, and all the activity possessed by both man and horse, to keep clear from the pointed horns which on every side were directed against him, as well as to prevent the herd from breaking through the living net with which it was surrounded. This was perhaps the most difficult part, and was attained by keeping each bull separately engaged, and thus preventing united action ; for what line was sufficient, armed as we were, to resist the simultaneous rush of these most powerful animals ? The continued activity and exertion requisite had knocked up many of the poor jades who had started in the morning, and the circle became smaller and smaller as the day advanced ; several, too, had been carried off severely gored and wounded by the horns and feet of the bulls. I, however, and the party with whom I started, were resolved to see the conclusion, and, redoubling our efforts, we at length, about four o'clock in the afternoon, succeeded in driving them into an enclosure where were a number of oxen (all at one time wild) with bells, quietly grazing. Here they were kept until required for the next day's sport.

The square of Alcoxete had been fitted up in the form of an arena, with seats or rather standing-places all round ; the centre was carefully cleaned, all stones removed, and fresh sand strewed. At one side a cart was stationed for a purpose to be presently described ; at the other a pen was fitted up for the reception of each bull as it was to make its appearance, communicating by a door with the place where the herd was enclosed. The difficulty of

bringing the bulls from their temporary resting-place to the scene of their humiliation was not less than that of their original capture. Through the forest they had only the trees and shrubs before them, to which they were accustomed ; and if the line of huntsmen alone was sufficient to awaken their rage and terror amidst scenes familiar to them, how much more must those feelings have been excited when passing through the streets of a town crowded with people, the houses gaily decorated with red, blue, white, and green hangings, and greeted with a thousand tongues in the joyfulness of expectation ? Twice the terrified and furious herd turned and dashed through the assembled crowd, tossing and goring all who ventured to oppose them, and twice the circling horsemen brought them back. One fine black bull took to the river and swam out about two miles before a boat could be put off to re-capture it. Several of the English soldiers who were quartered near the town swam after it, and one of them—an excellent swimmer—had nearly reached it, when a fishing-boat came up, and fixing a cord round the bull's horns, towed it in. The soldier however was resolved not have his trouble for nothing, and, mounting on its back, was landed safely amidst the shouts of the spectators. The sport of baiting the bulls for the purpose of taming them, began at three in the afternoon, when the heat of the sun had somewhat abated. Six of the wild animals were ushered into the circus, surrounded by a band of mounted picadores, and accompanied by several tame cattle with bells, when one by one they were secured with cords to the cart, and a leathern cap placed on the points of the horns, after which they were all driven into the pen. The circus was then cleared, and the Spaniards entered, gaily attired in the Andalusian costume, the grace and elegance of which must be seen to be properly understood. The hair, which is worn long, is confined in a black silk bag, which is fastened with bows of black riband ; the light-colored velvet

jacket, covered with gold lace and silver-gilt buttons ; the velvet vest, richly embroidered ; the lace shirt, red silk sash, velvet breeches, and silk stockings ; all harmonizing in color and form, set off the figure to the best advantage, and add to the grace and elegance for which the Andalusian is so justly celebrated. These men, of whom there were five or six, are accustomed from their infancy to the dangerous employment of bull-fighting, and the agility and dexterity displayed in evading the furious attacks of the bull, are astonishing. After carefully examining the arena, they each armed themselves with four short barbed darts, and waited for the coming of the bull. They had not to wait long : the door was thrown open, and the animal rushed into the centre, greeted by the shouts and *vivas* of the spectators. One of the Spaniards advancing, invited the attack, when the bull, who at first, bewildered and amazed, had stood tearing up the earth with its feet till almost hid from view by the cloud of dust, lashing itself into fury with its tail, rushed upon its opponent. All who were not accustomed to such spectacles thought the man must inevitably have perished ; but just as the long and powerful horns seemed to touch his body, he stepped nimbly aside, and turning smartly round, planted all four darts in the animals neck just behind the horns. Loud shouts of applause rewarded his dexterity, and the bull, more enraged than ever, ran round the arena, tearing up the earth and bellowing with rage, until encountered by a second picadore with like success. After the Spaniards had exhausted themselves in exciting the rage of the bull, they quitted the arena, and the populace were admitted to throw the bull. This was generally done by one man leaping between the horns, upon which he supported himself in an upright posture till relieved by his companions, who threw the bull to the ground. The cry of "*Largo ! largo !*" was the signal for its liberation, when some tame cattle being admitted, it was led by them to the pen. Six

bulls were thus baited the first day, the other six on the day following. Three weeks afterwards I had these very animals under my charge as baggage oxen, as tame and gentle oxen as could be desired.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 104



Sloth.

THE SLOTH.—(*Bradypus*.)

PLATE X.—THE SLOTH.

OF this quadruped, there are two species ; the Ai, and the Unau. It is called Sloth on account of its difficulty in walking.

The Unau, or two-toed Sloth, has no tail, and only two nails on the fore feet. The Ai, or three-toed Sloth, has a short tail, and three nails on every foot. The nose of the Unau is likewise much longer, the forehead higher, and the ears longer than those of the Ai. It differs also in the hair. As for its interior, its viscera are both formed and situated differently ; but the most distinctive, and, at the same time, the most singular character, is, that the Unau has forty-six ribs, while the Ai has but twenty-eight.—This alone supposes two species, quite distinct one from the other ; and these forty-six ribs, in an animal whose body is so short, is a kind of excess or error in nature ; for, even in the largest animals, and those whose bodies are relatively longer than they are thick, not one of them is found to have so many. The elephant has only forty, the dog twenty-six, and the human species twenty-four, &c. This difference in the construction of the Unau and the Ai supposes a greater difference between these two kinds than there is between that of the cat and the dog, which have the same number of ribs ; for the external differences are nothing in comparison with the internal ones, which are the causes of the others. These animals have neither incisive nor canine teeth ; their eyes are dull and heavy ; their mouths wide and thick ; their fur coarse and staring, and like dried grass ; their thighs seem almost disjointed from the haunch ; their legs very short, and badly shaped ; they have no soles to the feet, nor toes separately moveable, but only two or three claws excessively long, and crooked downwards and backwards. Unfurnished with

teeth, they cannot seize any prey, nor feed upon flesh, nor even upon vegetable food. Reduced to live on leaves and wild fruits, they take up a long time in crawling to a tree, and are still longer in climbing up to the branches. During this slow and painful labor, which sometimes lasts many days, they are obliged to support the most pressing hunger; and when, at length, one of them has accomplished its end, it fastens itself to the tree, crawls from branch to branch, and, by degrees, strips the whole tree of its foliage. In this manner it remains several weeks, without moistening its dry food with any liquid; and when it has consumed the store, and the tree is entirely naked, yet unable to descend, it continues on till hunger presses, and that becoming more powerful than the fear of danger or death, it drops like a shapeless, heavy mass, to the ground, without being capable of exerting any effort to break the violence of its fall.

On the ground, these animals are exposed to all their enemies; and, as their flesh is not absolutely bad, they are killed by men and beasts of prey. They seem to multiply but little; or, if they produce very often, it is only a small number, as they are furnished but with two teats. Every thing concurs, therefore, to their destruction, and the species supports itself with great difficulty. It is true, that, although they are slow, heavy, and almost incapable of motion, yet they are hardy, strong, and can abstain a long time from food: covered also with a thick and coarse fur, and unable scarcely to move, they waste but little, and fatten by rest, however poor and dry their food is. Although they have neither horns on their heads, nor hoofs to their feet, nor incisive teeth in the lower jaw, they are, notwithstanding, among the number of ruminating animals, and have, like them, four stomachs; so that they, consequently, can compensate for the quality of their food by the quantity they take at a time; and what is still more singular, is, that instead of having, like other ruminating ani-

mals, very long intestines, theirs are very short, like those of the carnivorous kind.

Both these animals belong to the southern parts of the New Continent, and are never to be met with in the Old. The Unau, as well as the Ai, is to be met with in the deserts of America, from Brazil to Mexico ; but they have never inhabited the northern countries. They cannot endure cold nor rain ; the change from wet to dry spoils their fur, which then resembles badly dressed hemp, rather than wool or hair.

Such is the description given of the Sloth, by Buffon and other naturalists ; and, judging of it from such a representation, it is not wonderful that the animal has become proverbial as one of the most sluggish and wretched of the whole creation. It happens, however, that this description of its habits and sufferings is sadly at variance with truth. Mr. Waterton, who, in his numerous and protracted journeyings through the woods of South America, had abundant opportunities of studying the natural history of the Sloth, has shown the incorrectness of preceding writers upon this subject.

“Let us turn our attention (says he) to the Sloth, whose haunts have hitherto been so little known, and probably little looked into. Those who have written on this singular animal have remarked that he is in a perpetual state of pain ; that he is proverbially slow in his movements ; that he is a prisoner in space ; and that, as soon as he has consumed all the leaves of the tree upon which he has mounted, he rolls himself up in the form of a ball, and then falls to the ground. This is not the case.

“If the naturalists who have written the history of the Sloth, had gone into the wilds, in order to examine his haunts and economy, they would not have drawn the foregoing conclusions ; they would have learned that, though all other quadrupeds may be described while resting on the

ground, the Sloth is an exception to this rule, and that his history must be written while he is in the tree.

“This singular animal is destined by nature to be produced, to live, and to die, in the trees ; and, to do justice to him, naturalists must examine him in his upper element. He is a scarce and solitary animal, and, being good food, he is never allowed to escape. He inhabits remote and gloomy forests, where snakes take up their abode, and where cruelly stinging ants and scorpions, and swamps, and innumerable thorny shrubs and bushes, obstruct the steps of civilized man. Were you to draw your own conclusions from the descriptions which have been given of the Sloth, you would probably suspect that no naturalist had actually gone into the wilds with the fixed determination to find him out and examine his haunts, and see whether Nature has committed any blunder in the formation of this extraordinary creature, which appears to us so forlorn and miserable, so ill put together, and so totally unfit to enjoy the blessings which have been so bountifully given to the rest of animated nature ; for, as it has formerly been remarked, he has no soles to his feet, and he is evidently ill at ease when he tries to move on the ground ; and it is then that he looks up in your face with a countenance that says, ‘Have pity on me, for I am in pain and sorrow.’

“It mostly happens that Indians and negroes are the people who catch the Sloth, and bring it to the white man. Hence it may be conjectured that the erroneous accounts we have hitherto had of the Sloth have not been penned down with the slightest intention to mislead the reader, or give him an exaggerated history, but that these errors have naturally arisen by examining the Sloth in those places where Nature never intended that he should be exhibited.

“However, we are now in his own domain. Man but little frequents these dark and noble forests, which extend far and wide on every side of us. This, then, is the proper

place to go in quest of the Sloth. We will first take a near view of him. By obtaining a knowledge of his anatomy, we shall be enabled to account for his movements hereafter, when we see him in his proper haunts. His fore legs, or, more correctly speaking, his arms, are apparently much too long, while his hind legs are very short, and look as if they could be bent almost to the shape of a cork-screw. Both the fore and hind legs, by their form, and by the manner in which they are joined to the body, are quite incapacitated from acting in a perpendicular direction, or in supporting it on the earth, as the bodies of other quadrupeds are supported, by their legs. Hence, when you place him on the floor, his belly touches the ground. Now, granted, that he supported himself on his legs like other animals, nevertheless he would be in pain, for he has no soles to his feet, and his claws are very sharp and long, and curved; so that, were his body supported by his feet, it would be by their extremities; just as your body would be were you to throw yourself on all fours, and try to support it on the ends of your toes and fingers—a trying position. Were the floor of glass, or of a polished surface, the Sloth would actually be quite stationery; but as the ground is generally rough, with little protuberances upon it, such as stones, or roots of grass, &c., this just suits the Sloth, and he moves his fore legs in all directions, in order to find something to lay hold of; and when he has succeeded, he pulls himself forward, and is thus enabled to travel onwards, but, at the same time, in so tardy a manner as to acquire him the name of Sloth.

“Indeed, his looks and his gestures evidently betray his uncomfortable situation; and, as a sigh every now and then escapes him, we may be entitled to conclude that he is actually in pain.

“Some years ago I kept a Sloth in my room for several months. I often took him out of the house, and placed him upon the ground, in order to have an opportunity of ob-

serving his motions. If the ground were rough, he would pull himself forwards by means of his fore legs, at a pretty good pace, and he invariably shaped his course towards the nearest tree. But if I put him upon a smooth and well trodden part of the road, he appeared to be in trouble and distress: his favorite abode was the back of a chair; and, after getting all his legs in a line upon the topmost part of it, he would hang there for hours together, and often, with a low and inward cry, would seem to invite me to take notice of him.

“The Sloth, in its wild state, spends its whole life in the trees, and never leaves them but through force or accident. An all-ruling Providence has ordained man to tread on the surface of the earth, the eagle to soar in the expanse of the skies, and the monkey and squirrel to inhabit the trees: still, these may change their relative situations without feeling much inconvenience; but the Sloth is doomed to spend his whole life in the trees; and, what is more extraordinary, not *upon* the branches, like the squirrel and the monkey, but *under* them. He moves suspended from the branch, he rests suspended from it, and he sleeps suspended from it. To enable him to do this, he must have a very different formation from that of any other known quadruped.

“Hence, his seemingly bungled conformation is at once accounted for; and in view of the Sloth leading a painful life, and entailing a melancholy and miserable existence on its progeny, it is but fair to surmise that it enjoys life just as much as any other animal, and that his extraordinary formation and singular habits are but further proofs to engage us to admire the wonderful works of Omnipotence.

“It must be observed, that the Sloth does not hang head downwards like the vampyre. When asleep, he supports himself on a branch parallel to the earth. He first seizes the branch with one arm, and then with the

other ; and, after that, brings up both his legs, one by one, to the same branch ; so that all four are in a line ; he seems perfectly at rest in this position. Now, had he a tail, he would be at a loss to know what to do with it in this position : were he to draw it up with his legs, it would interfere with them ; and were he to let it hang down, it would become the sport of the winds. Thus his deficiency of tail is a benefit to him ; it is merely an apology for a tail, scarcely exceeding an inch and a half in length.

“ I observed when he was climbing, he never used his arms both together, but first one and then the other, and so on alternately. There is a singularity in his hair, different from that of all other animals, and, I believe, hitherto unnoticed by naturalists ; his hair is thick and coarse at the extremity, and gradually tapers to the root, where it becomes fine as the finest spider’s web. His fur has so much the hue of the moss which grows on the branches of the trees, that it is very difficult to make him out when he is at rest.

“ The male of the three-toed Sloth, has a longitudinal bar of very fine black hair on his back, rather lower than the shoulder-blades ; on each side of this black hair there is a space of yellow hair, equally fine ; it has the appearance of being pressed into the body, and looks exactly as if it had been singed. If we examine the anatomy of his fore legs, we shall immediately perceive by their firm and muscular texture, how very capable they are of supporting the pendent weight of his body, both in climbing and at rest ; and, instead of pronouncing them a bungled composition, as a celebrated naturalist has done, we shall consider them as remarkably well calculated to perform their ordinary functions.

“ As the Sloth is an inhabitant of forests within the tropics, where the trees touch each other in the greatest profusion, there seems to be no reason why he should confine himself to one tree alone for food, and entirely strip it

of its leaves. During the many years I have ranged the forests, I have never seen a tree in such a state of nudity ; indeed, I would hazard a conjecture, that by the time the animal has finished the last of the old leaves, there would be a new crop on the part of the tree he had stripped first, ready for him to begin again, so quick is the process of vegetation in these countries.

“ There is a saying among the Indians, that when the wind blows, the Sloth begins to travel. In calm weather he remains tranquil, probably not liking to cling to the brittle extremity of the branches, lest they should break with him in passing from one tree to another ; but as soon as the wind rises, the branches of the neighboring trees become interwoven, and then the sloth seizes hold of them, and pursues his journey in safety. There is seldom an entire day of calm in these forests. The trade wind generally sets in about ten o'clock in the morning, and thus the Sloth may set off after breakfast, and get a considerable way before dinner. He travels at a good round pace ; and were you to see him pass from tree to tree, as I have done, you would never think of calling him a Sloth.

“ Thus, it would appear, that the different histories we have of this quadruped are erroneous on two accounts : first, that the writers of them, deterred by difficulties and local annoyances, have not paid sufficient attention to him in his native haunts ; and, secondly, they have described him in a situation in which he was never intended by nature to cut a figure, I mean on the ground. The Sloth is as much at a loss to proceed on his journey upon a smooth and level floor, as a man would be who had to walk a mile in stilts upon a line of feather-beds.

“ One day, as we were crossing the Essequibo, I saw a large two-toed Sloth on the ground upon the bank ; how he got there nobody could tell : the Indian said he had never surprised a Sloth in such a situation before ; he would hardly have come there to drink, for both above and below

the place, the branches touched the water, and afforded him an easy and safe access to it. Be this as it may, though the trees were not above twenty yards from him, he could not make his way through the sand time enough to escape before we landed. As soon as we got up to him, he threw himself on his back, and defended himself in gallant style with his fore legs. 'Come, poor fellow,' said I to him, 'if thou hast got into a hobble to-day, thou shalt not suffer for it: I'll take no advantage of thee in misfortune; the forest is large enough both for thee and me to rove in: go thy ways up above, and enjoy thyself in these endless wilds; it is more than probable thou wilt never have another interview with man.' On saying this, I took up a large stick which was lying there, held it for him to hook on, and then conveyed him to a high and stately mora. He ascended with wonderful rapidity, and in about a minute he was almost at the top of the tree. He now went off in a side direction, and caught hold of the branch of a neighboring tree; he then proceeded towards the heart of the forest; I stood looking on, lost in amazement at his singular mode of progress. I followed him with my eye till the intervening branches closed in betwixt us; and then I lost sight for ever of the two-toed Sloth. I was going to add, that I never saw a Sloth take to his heels in such earnest; but the expression will not do, for the Sloth has no heels."

THE TURKEY.

Gallinacea.

PLATE XI.—WILD TURKEYS.

THE native country of the wild turkey extends from the north-western territory of the United States to the isthmus of Panama ; south of which it is not to be found. In Canada, and the now densely-peopled parts of the United States, this bird was formerly very abundant ; but the progress and aggressions of man have compelled them to seek refuge in the remote interior. It is not probable that the range of the wild turkey extends to or beyond the Rocky Mountains. The Mandan Indians, who a few years ago visited the city of Washington, considered it one of the greatest curiosities they had seen, and prepared a skin of one, to carry home for exhibition.

It is not necessary to be particular in describing the appearance of a bird so well known in its tame state. The difference consists chiefly in the superior size and beauty of the plumage in the wild turkey ; for, under the care of man, this bird has greatly degenerated, not only in Europe and Asia, but in its native country. When full grown, the male wild turkey is nearly four feet in length, and nearly five in extent (from wing to wing), and presents in its plumage a rich assortment of colors, brown predominating, which might be vainly sought in the domesticated bird. Altogether his appearance is such as, with other considerations, disposed Dr. Franklin to regret that he, rather than the bald eagle, had not been selected as the national emblem of the United States. But since the choleric temper and the vanity of the tame turkey have become proverbial in various languages, the authors of " American Ornithology " are well pleased that its effigy was not placed on the American flag.



9584

The wild turkeys do not confine themselves to any particular food ; they eat maize, all sorts of berries, fruits, grasses, beetles, and even tadpoles, young frogs, and lizards have occasionally been found in their crops ; but where the pecun nut is plenty, they prefer that fruit to any other nourishment. Their more general predilection, however, is for the acorn, on which they rapidly fatten. When an unusually profuse crop of acorns is produced in a particular section of country, great numbers of turkeys are enticed from their ordinary haunts, in the surrounding districts. About the beginning of October, they assemble in flocks, and direct their course to the rich bottom lands. At this season they are observed in great numbers on the Ohio and Mississippi. The time of this irruption is known to the Indians by the name of the *Turkey month*.

The males, usually termed *gobblers*, associate in parties, numbering from ten to one hundred, and seek their food apart from the females ; whilst the latter either move about singly with their young, or, in company with other females and their families, form troops, sometimes consisting of seventy or eighty individuals. They are all intent upon avoiding the old males, who, whenever opportunity offers, attack and destroy the young by repeated blows on the skull. All parties, however, travel in the same direction, and on foot, unless they are compelled to seek their individual safety by flying from the dog of the hunter, or their progress is impeded by a large river. When about to cross a river, they select the highest eminences, that their flight may be the more certain ; and here they sometimes remain for a day or more, as if for the purpose of consultation, or to be duly prepared for so hazardous a voyage. During this time the males gobble obstreperously, and strut with extraordinary importance, as if they would animate their companions, and inspire them with hardihood. The females and young also assume much of the pompous air of the males, the former spreading their tails, and

moving silently around. At length the assembled multitude mount to the tops of the highest trees, whence, at a signal note from the leader, the whole together wing their way towards the opposite shore. Immediately after these birds have succeeded in crossing a river, they for some time ramble about without any apparent unanimity of purpose, and a great many are destroyed by the hunters, though they are then least valuable.

When the turkeys have arrived in their land of abundance, they disperse in small flocks, composed of individuals of all ages and sexes, intermingled, who devour all the mast as they advance: this occurs about the middle of November. It has been observed that after these long journeys the turkeys become so familiar as to venture on the plantations, and even approach so near the farm-houses as to enter the stables and corn-cribs in search of food. In this way they pass the autumn and part of the winter. During this season great numbers are killed by the inhabitants, who preserve them in a frozen state, in order to transport them to a distant market.

Early in March they begin to pair. The sexes roost apart, but at no great distance, so that when the female utters a call, every male within hearing responds, rolling note for note, in the most rapid succession, not as when spreading the tail, and strutting near the hen, but in a voice resembling that of the tame turkey, when he hears any unusual or frequently repeated noise. Where the turkeys are numerous, the woods, from one end to the other, sometimes for hundreds of miles, resound with this remarkable noise, uttered responsively from their roosting places. This is continued for about an hour; and, on the rising of the sun, they silently descend from their perches, and the males begin to strut, as if to win the admiration of their mates. Their process of approach to the females is remarkably pompous and ceremonious; and, in its course, the males often encounter one another, and desperate bat-

tles ensue, when the conflict is only terminated by the flight or death of the vanquished. With the hen whose favor is thus obtained, the male is mated for the season, though he does not hesitate to bestow his attentions on several females whenever an opportunity offers. One or more females, thus associated, follow their favorite, and rest in his immediate neighborhood, if not on the same tree, until they begin to lay, when they shun their mates, in order to save their eggs, which the male uniformly breaks if in his power. At this period, the sexes separate, and the males, being much emaciated, retire and conceal themselves by prostrate trees, in secluded parts of a forest, or in the almost impenetrable privacy of a cane-brake. By thus retiring, using very little exercise, and feeding on peculiar grasses, they recover their flesh and strength, and, when this object is attained, again congregate, and re-commence their rambles.

About the middle of April, when the weather is dry, the female selects a proper place in which to deposite her eggs, secured from the encroachment of water, and as far as possible concealed from the watchful eye of the crow. The nest is placed on the ground, either on a dry ridge, in the fallen top of a dead leafy tree, under a thicket of sumach or briars, or by the side of a log: it is of a very simple structure, being composed of a few dry leaves. In this receptacle the eggs are deposited, sometimes to the number of twenty, but more usually from nine to fifteen: they are like those of the domestic bird.

The female uses great caution in the concealment of her nest: she seldom approaches it twice by the same route; and, on leaving her charge, she is very careful to cover the whole with dried leaves, in such a manner as to make it very difficult even for one who has watched her motions to indicate the exact spot. Nor is she easily driven from her post by the approach of apparent danger; but if an enemy appears, she crouches as low as possible,

and suffers it to pass. They seldom abandon their nests on account of being discovered by man; but should a snake or other animal suck one of the eggs, the parent leaves them altogether. If the eggs be removed, she again seeks the male, and re-commences laying, though otherwise she lays but one set of eggs during the season. Several turkey-hens sometimes associate, perhaps for mutual safety, deposite their eggs in the same nest, and rear their broods together. Mr. Audubon once found three females sitting on forty-two eggs. In such cases the nest is commonly guarded by one of the parties, so that no crow, raven, or even polecat, dares approach it. The mother will not forsake her eggs when near hatching, while life remains :— she will suffer an enclosure to be made around, and imprison her, rather than abandon her charge.

As the hatching generally occurs in the afternoon, and proceeds but slowly, the first night is commonly spent in the nest; but afterwards the mother leads them to elevated dry places, as if aware that humidity, during the first few days of their life, would be dangerous to them, they having then no other protection than a delicate, soft, hairy down. In rainy seasons wild turkeys are scarce, because when completely wetted the young rarely survive. At the expiration of about two weeks the young follow their mother to some low, large branch of a tree, where they nestle under her broadly-curved wings. The time then approaches when they seek the open ground or prairie land during the day, in search of berries and grasshoppers, thus securing a plentiful supply of food, and enjoying the genial influence of the sun. The young turkeys now grow rapidly, and in the month of August, when several broods flock together, and are led by their mothers into the forest, they are stout, and able to secure themselves from the unexpected attack of their enemies, by rising quickly from the ground, and reaching with ease the upper limbs of the tallest trees.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100



Lyre Bird.

THE LYRE-BIRD.

Menura Superba—Davies.

PLATE XII.—MALE AND FEMALE LYRE-BIRD.

THE Lyre-bird—a most beautiful bird, is a native of Australia ; and, from its appearance, and the difficulty of classifying it, it is an object of great interest to the naturalist. M. Vieillot, in his work on the “Birds of Paradise,” figures the Lyre-bird under the title of *Paradisea Parkinsoniana*, in honor of J. Parkinson, Esq., of the Leverian Museum, through whose means he received a drawing of it. Vieillot, however, was preceded in his description by General Davies, who, in the year 1800, with juster views respecting the bird in question, characterized it in the “Linnæan Transactions,” as the type of a new genus, and gave it the appellation of *Menura superba*, which is now its established title.

With respect to the affinities or natural situation in the arrangement of the feathered tribes, which the *menura* holds, there is considerable difference of opinion among ornithologists. Vieillot, as we have said, placed it among the birds of paradise. Dr. Shaw and Dr. Latham place it in the *gallinaceous* order, regarding it as allied to the curassows, pheasants and fowls. Baron Cuvier places it among the “*passereaux*,” or passerine order, observing that although “its size has induced some to associate it with the *gallinaceous* group, the *lyre-bird* evidently belongs to the *passerine* order, its toes, except the outer and middle, which are united together as far as the first joint, being separated ; it comes near the thrushes in the form of the beak, which is triangular at the base, and slightly compressed and notched at the tip ; the membranous nostrils are very large, and partially covered with feathers, as in the jays.

That the lyre-bird is not a *gallinaceous bird*, we have little hesitation in affirming. Its size, as Cuvier observes, and more especially its terrestrial habits, which may in some respects resemble those of a fowl, have contributed to the establishment of this opinion, which the name *mountain pheasant*, given it by the colonists, has probably helped to confirm, but which general currency does not necessarily render true. Neither in the beak, the feet, nor (we may add) the plumage of the lyre-bird, do we recognise the characters of one of the *gallinaceous order*. On the other hand, there are certain genera usually regarded as forming part of the family of thrushes, to which in every essential character the genus *menura* closely approximates; and with these it will, we think, be found to be in immediate affinity. As, however, our object is not to enter into an abstruse account of the affinities of genera, we shall add nothing (and much might be added) to the above observation, but confine ourselves to the description and the habits of this interesting and elegant bird.

The *menura* equals a common pheasant in size, but its limbs are longer in proportion, and its feet much larger; its toes are armed with large arched blunt claws; the hind-toe is as long as are the fore-toes, the length of these being nearly equal, but its claw is larger than that of any of the others; the scales of the tarsi and toes are large bold plates, and their color is glossy black; the head is small; the beak, as Cuvier has described it, is triangular at the base, pointed and compressed at the tip; in the male the feathers of the head are elongated into a crest; the wings are short, concave, and rounded, and the quill-feathers are lax and feeble; the general plumage is full, deep, soft, and downy. The tail is modified into a beautiful, long, plume-like ornament, representing, when erect and expanded, the figure of a lyre, whence the name of lyre-bird. This ornamental tail is, however, confined to the male. In the female the tail is long and graduated,

and the feathers are perfectly webbed on both sides of the shaft, although their texture is soft and flowing. In the male the tail consists of sixteen feathers; of these (see the plate) the outer one on each side is broadly but loosely webbed within, its outer web being narrow; as it proceeds it curves outwards, bends in, and again turns boldly outwards and downwards, both together resembling the framework of an ancient lyre, of which the intermediate feathers are the strings; these feathers, except the two central, which are truly but narrowly webbed on the outer side, consist each of a slender shaft, with long filamentous bubbles, at a distance from each other, and springing out alternately. The appearance of these feathers, the length of which is about two feet, is peculiarly graceful; their color is amber brown, but the two outer tail feathers are gray, tipped with black, edged with rufous, and transversely marked on the inner web with transparent, triangular bars. The general plumage of the *menura* is amber brown above, tinged with olive, and merging into rufous on the wings, and also on the throat. The under parts are ashy gray. With respect to the habits of the lyre-bird, much yet remains to be known. Shaw, in the account he collected, observes that its powers of song are very great. "At the early part of the morning it begins to sing, having a very fine natural note; and, gradually ascending some rocky eminence, scratches up the ground in the manner of some of the pheasant tribe, elevating its tail, and at intervals imitating the notes of every other bird within hearing; and having continued this exercise for about two hours, again descends into the valleys or lower grounds."

It is in the hilly districts of Australia that the *menura* is to be found; and its manners are shy and recluse. It is almost exclusively terrestrial, seldom taking wing, and, when forced to do so, flying with labor and difficulty. Dr. Latham remarks, "It is said that it will frequently imitate the notes of other birds, so as to deceive most people;"

and we may here add that the musical powers of this bird, which we have been inclined to doubt, have been confirmed to us by the testimony of a gentleman who, during his residence in Australia, had many opportunities of gaining information upon the subject, and he assured us that not only were its own notes rich and melodious, but that it imitated those of other birds with surprising tact and execution.

"The lyre-bird," observes Mr. Bennett, "is a bird of heavy flight, but swift of foot. On catching a glimpse of the sportsman, it runs with rapidity, aided by the wings, over logs of wood, rocks, or any obstruction to its progress. It seldom flies into trees, except to roost, and then rises only from branch to branch. They build in old hollow trunks of trees, which are lying upon the ground, or in the holes of rocks: the nest is merely formed of dried grass, or dried leaves scraped together: the female lays from twelve to sixteen eggs, of a white color, with a few scattered light blue spots. The young are difficult to catch, as they run with rapidity, concealing themselves among the rocks and bushes. The lyre-pheasant, on descending from high trees, on which it perches, has been seen to fly some distance. It is more often observed during the early hours of the morning, and in the evening, than during the heat of the day. Like all the *gallinaceous* tribe, it scratches about the ground and roots of trees, to pick up seeds, insects, &c. The aborigines decorate their greasy locks, in addition to the emu feathers, with the splendid tail-feathers of this bird, when they can procure them."

Dr. Latham says, "I do not find that it has been yet attempted whether this bird will bear confinement; but, if the trial should turn out successful, it would be a fine acquisition to our menageries."

[illegible]



Boar Hunt.

WILD BOAR.

PLATE III.

Cine—Mammalia. Order VIII.—Pachydermata: thick-skinned mammals. 16 can, 200.

The wild boar, which, according to Cuvier, is the original form which have given all the modern varieties of the domestic hog, seems to have also existed in the time in nearly every country of Europe and Asia, and even in some parts of Africa. In America it was unknown until introduced by Europeans; for the *Ferocery*, although sometimes called the Mexican hog, appears to be totally and independently a distinct animal.

In the 'Description of London,' by Pausanias, written in the reign of Henry II, in the latter part of the twelfth century, it is stated that the forest by which London was then surrounded was frequented by hares, as well as various other wild animals. The tradition is, that the county of York in England was famous as a haunt of boars. A further interesting notice of a late old writing designated by the name of the Book of 1000, which has now been ascribed to Henry II. It lies in the library of St. Andrew, in the cathedral church of which city it is said that there were to be seen before the Reformation, statues by Charles the first duke, two boars' heads of the extraordinary length of almost three yards, the ornaments of an enormous head which had been displayed by the aristocrats after having been infested the neighbourhood.

In every country where the wild boar was found the hunting of the animal was a favorite sport. In ancient times, it was practiced equally by the civilized Romans, and by the own barbarians for fathers in Germany, and in this latter. In this country the wild boar was reckoned among the ordinary 'beasts of policy' down to a con-

No 18.



Native American

WILD BOAR.

PLATE XIII.

Class—Mammalia. *Order* VIII.—Pachydermata ; thick-skinned animals. *Genus*, Sus.

The wild boar, which, according to Cuvier, is the original from which have sprung all the common varieties of the domestic hog, seems to have abounded at one time in nearly every country of Europe and Asia, and also in some parts of Africa. In America it was unknown until introduced by Europeans ; for the Peccary, although sometimes called the Mexican hog, appears to be indisputably a distinct animal.

In the ‘Description of London,’ by Fitzstephen, written in the reign of Henry II., in the latter part of the twelfth century, it is stated that the forest by which London was then surrounded was frequented by boars as well as various other wild animals. The tradition is, that the county of Fife in Scotland was famous as a haunt of boars. A district forming a portion of it is in old writings designated by the name of the Boar Hills, which has now been corrupted into Byre Hills. It lies in the vicinity of St. Andrews, in the cathedral church of which city it is said that there were to be seen before the Reformation, attached by chains to the high altar, two boars’ tusks of the extraordinary length of sixteen inches each, the memorials of an enormous brute which had been slaughtered by the inhabitants after having long infested the neighborhood.

In every country where the wild boar was found, the hunting of the animal was a favorite sport. In ancient times, it was practised equally by the civilized Romans, and by our own barbarous forefathers in Germany, and in this island. In this country the wild boar was reckoned among the ordinary “beasts of venery” down to a com-

paratively recent period. In Strutt's 'Sports and Pastimes of the People of England' are given two engravings illustrative of this subject: one from a manuscript of the ninth century, respecting a Saxon chieftain, attended by his huntsmen and a couple of hounds, pursuing the wild swine in a forest; and the other showing the manner in which the animal was attacked in the fourteenth century. There is a famous old work called the 'Book of St. Alban's,' from having been first printed in 1486 at the Abbey there, which contains the following:

"Wheresoever ye fare by frith or by fell,
My dear child take heed how Tristram do you tell
How many manner beastis of venery there were;
Listen to your dame, and she shall you lere:—
Four manner beastis of venery there are;
The first of them is the hart, the second is the hare,
The boar is one of tho, the wolf and not one mo.
And where that ye come in plain or in place,
I shall you tell which been beasts of enchase;
One of them is the buck, another is the doe,
The fox, and the marteron, and the wild roe:
And ye shall, my dear child, other beasts all,
Whereso ye find them, Rascal ye shall them call,
In frith or in fell, or in forest, I you tell

In a well-known old French treatise 'On Hunting and Falconry,' written in the sixteenth century, one of the chapters is devoted to the subject of the properties and mode of hunting the boar. The animal, the writer says, ought not to be accounted among beasts to be chased by common hunting dogs, but is fit game rather for mastiffs and their like. Dogs, he argues, accustomed to hunt the boar, soon lose their delicacy of smell, and their capacity of tracking other game, from being in this sport accustomed to see the object of their pursuit so near them, and, as he expresses it, to have a strong sensation of their beast. Besides, the ferocity and power of the animal are such, that in our author's opinion, it is exposing dogs, valuable on

account of their scent rather than their strength, to far too great a risk to employ them in this sort of sport. The boar, he says, will kill a dog with a single blow from his tusks; and when he turns upon a pack, generally selects the strongest, and will lay several of them dead in as many instants. He speaks of one he saw, which, while pursued by fifty dogs, suddenly turned upon them, and not only slew six or seven of them, but wounded so many more, that only ten of the whole number came home uninjured.

Boar-hunting, it may be conceived from these facts, was a sport by no means unattended with danger to the hunter himself, as well as to his dogs. As practised during the middle ages, the animal, when brought to a stand, was attacked, sometimes on horseback and sometimes on foot; and either by swords which were struck into his flesh, or by strong spears which were protruded against him till he either rushed upon the point, or exposed himself to a thrust from the person by whom the weapon was held. The parts into which it was attempted to plunge the spear, with the view of inflicting the most deadly wounds, were the forehead, between the eyes, and the breast, immediately under the shoulder-blade. Our engraving presents a spirited sketch of this mode of attack. It sometimes happened, however, that the boar would, by a sudden movement, contrive to seize the haft of the protruded spear between his powerful jaws, in which case his assailant was exposed to the most imminent danger of destruction. One crunch was sufficient to grind the wood to fragments; and the next instant, unless some one was by to renew the attack, the enraged beast had his unarmed enemy upon the ground under his hoofs, and was ripping him up with his tusks. When horses were employed, they were frequently wounded in this way.

Boar-hunting is still a favorite amusement in India; but there the sport appears to be always followed on horseback, and the animal is attacked by long spears or javelins,

which are not usually thrust into his flesh, the hunter retaining a hold of the weapon, but are lanced at him at a distance of twenty or thirty yards, as he flies before his mounted pursuers. The Indian wild hog does not seem to be quite so ferocious an animal as either the African or the European species. Ample and interesting details and anecdotes on hog-hunting in India may be found in the works upon Indian field sports by Daniel, Williamson, and Johnson. Among other anecdotes, Mr. Johnson relates the following:—"I was one of a party of eight gentlemen on a sporting excursion at Hye, near the city of Patna, on the banks of the Soane river. Returning one morning from shooting, we met with a very large boar in a rhur*, which we did not fire at or molest, as several of the gentlemen were very fond of hunting them, and we had no spears with us. The next morning we all sallied forth in search of him, and, just as we arrived at the spot where we saw him the day before, we discovered him, at some distance, trotting off towards a grass jungle, on the banks of the river: we pressed on our horses as fast as possible, and were nearly up with him, when he disappeared all at once; our horses were then nearly at their full speed, and four of them could not be pulled up in time to prevent their going into a deep branch of the river, the banks of which were at least fourteen or fifteen feet high;—luckily for us there was no water in it, or anything but fine sand, and no person was hurt. One of the horses, which was very vicious, got loose, attacked the others, and obliged all the gentlemen to quit them, and walk to their tents, where one of the horses had arrived before them, and the rest were soon caught. A few days after this we went again early in the morning in pursuit of the same hog, and found him farther off from the grass jungle, in a rhur-field, from which,

* "Rhur is a species of lupine, or pulse, which grows to the height of from four to six or seven feet; the seeds are eaten by the natives of India, and are also given to the cattle."

with much difficulty, we drove him into a plain, where he stood at bay, challenging the whole party, boldly charging every horse that came within fifty yards of him, grunting loudly as he advanced. I was then a novice in the sport, but I have never since seen any hog charge so fiercely. The horse I rode would not go near him, and when I was at a considerable distance off, he charged another horse with such ferocity, that mine reared and plunged in such a violent manner as to throw me off: two or three others were dismounted nearly at the same time, and although there were many horses present that had been long accustomed to the sport, not one of them would stand his charge. He fairly drove the whole party off the field, and gently trotted on to the grass jungle, (foaming and grinding his tusks,) through which it was impossible to follow or drive him.

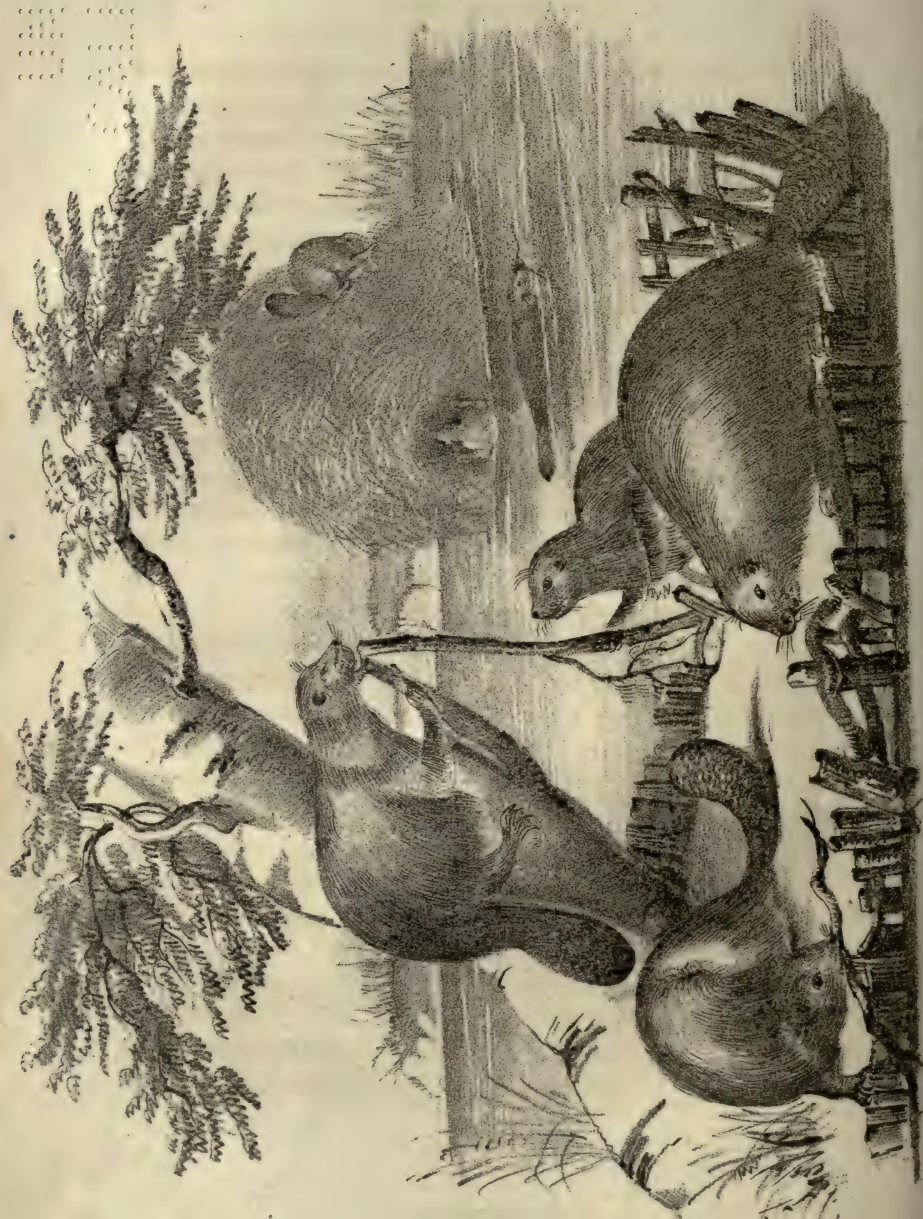
“ The largest boar I have ever seen killed was extremely old and thin ; he measured in height to the top of the shoulder, forty-three inches, and his tusks were ten inches long. He was fierce, but showed little sport, owing to his taking shelter in a thick rhur-field, from which we could not drive him. Two very large greyhounds were slipped to him ; one of them he instantly killed, and the other he severely wounded. A random spear, thrown by a gentleman who did not see him distinctly at the time, struck him in the head, and he fell dead without receiving any other wound.”

In England, there has been no boar-hunting for some ages. In France, however, where there are large tracts of forest which supply fuel to the towns, boars are not uncommon, although their ferocity is much diminished. Boar-hunting is still practised in some parts of Germany, but in a fashion which at once deprives the sport of its only redeeming quality—its adventurous character, and makes it more cruel and sanguinary than ever. The animals who are to be destroyed are first enclosed in a sort of pen, from

which they can only escape by one opening, and when they attempt to rush out, are slaughtered there by the hunters, who sit on horseback, armed with spears and swords, with which they have only to strike them till they expire.

We may remark that, in some countries, even the domesticated hog retains a great deal of the fierceness which characterizes the wild breed. Mr. Lloyd, in his 'Field Sports of the North of Europe,' relates the following adventure, which befel him near Carlstad in Sweden :

"Towards evening, and when seven or eight miles from home, we came to a small hamlet, situated on the recesses of the forest ; here an old sow and her progeny made a determined dash at a brace of very valuable pointers I at that time had along with me, and who naturally took shelter behind us. My man had a light spear in his hand, similar to those used by our lancers : this I took possession of ; and directing him to throw the dogs over a fence, in the angle of which we were cooped up, I placed myself between the dogs and their pursuers. The sow, nevertheless, pressed forward ; and it was only by giving her a severe blow across the snout with the butt end of the spear, that I stopped her further career. Nothing daunted, however, by this reception, she directed her next attack against myself, when, in self-defence, I was obliged to give her a home-thrust with the point of the spear. These attacks she repeated three several times, and as often got the spear up to the hilt in either her head or neck. She then slowly retreated, bleeding at all pores. So savage and ferocious a beast I never saw in my life. In the fray I broke my spear, which was as well, for it was by no means strong enough to answer the purpose for which it was intended. . . . This was not a solitary instance of the ferocity of pigs. It was the same throughout Sweden ; for, whenever they caught the sight of my dogs, they generally charged ; and, if they came up with them, would tumble them over and over again with their snouts."



THE BEAVER.

PLATE XIV.

Class—Mammalia. *Order* VI.—Rodentia, Knawing Animals. *Genus*—Castor.

In all countries, as man is civilized and improved, the lower ranks of animals are depressed and degraded. Either reduced to servitude, or treated as rebels, all their societies are dissolved, and all their united talents rendered ineffectual. Their feeble arts quickly disappear; and nothing remains but their solitary instincts, or those foreign habitudes which they receive from human education.

The Beaver seems to be now the only remaining monument of that kind of intelligence in brutes, which, though infinitely inferior, as to its principle, to that of man, supposes, however, certain common projects, certain relative ends in view, projects which, having for their basis society, in like manner, suppose some particular method of understanding one another, and of acting in concert.

It is allowed that the Beaver, far from having an absolute superiority over the other animals, seems, on the contrary, to be inferior to some of them as to its qualities merely as an individual; and this fact is confirmed by observing a young Beaver, which was sent to Paris from Canada in the beginning of the year 1758. It is an animal tolerably mild, tranquil, and familiar, though rather, it would seem, gloomy and melancholy. If we consider this animal, therefore, in its dispersed and solitary state, we shall find, that, as to internal qualities, it is not superior to other animals; that it has not more ingenuity than the dog, more sense than the elephant, or more cunning than the fox. It is rather remarkable for the singularities of its internal qualities. Of quadrupeds, the Beaver alone has a flat oval tail, covered with scales, which serves as a

rudder to direct its motions in the water. It is the only quadruped that has membranes between the toes on the hind feet, and at the same time none on the fore ones, which it uses as hands in carrying food to the mouth. It is the only one which, while it resembles a terrestrial animal in its foreparts, seems to approach the nature of an aquatic being in its hind ones.

The Beavers begin to assemble in the month of June or July, in order to form a society, which is to continue for the greatest part of the year. They arrive in numbers from every side, and presently form a company of two or three hundred. The place of meeting is commonly the place where they fix their abode; and this is always by the side of some lake or river. If it be a lake in which the waters are always upon a level, they dispense with building a dam; but if it be a running stream, which is subject to floods and falls, they then set about building a dam, or pier, that crosses the river, so as to form a dead water in that part which lies above and below. This dam, or pier, is often a hundred feet long, and ten or twelve feet thick at the base. If we compare the greatness of the work with the power of the architect, (the largest beavers weighing from fifty to sixty pounds, and, in length being little more than three feet from the tip of the snout to the insertion of the tail,) it will appear enormous; but the solidity with which it is built is still more astonishing than its size. The part of the river over which this dam is usually built is where it is most shallow, and where some great tree is found growing by the side of the stream. This they pitch upon as proper for making the principal part in their building; and, though it is often thicker than a man's body, they yet instantly set about cutting it down. For this operation they have no other instrument but their four incisive teeth, which soon lay it level, and that also on the side they wish it to fall, which is always across the stream. They then set about cutting

the top branches, to make it lie close and even, and serve as the principal beam of their fabric.

These operations are performed in common. At one time a number of Beavers are employed together at the foot of the tree in knawing it down; and, when this part of their labor is accomplished, it becomes the business of others to sever the branches, while a third party are engaged along the borders of the river, or lake, in cutting other trees, which, though smaller than the first tree, are yet as thick as the leg, if not the thigh, of a common sized man. These they carry with them by land to the brink of the river, and then by water to the place allotted for their building; where, sharpening them at one end, and forming them into stakes, they fix them in the ground, at a small distance from each other, and fill up the vacant spaces with pliant branches. While some are thus employed in the stakes, others go in search of clay, which they prepare for their purpose with their tails and their feet, and with which, brought home in large quantities, they render their structure still more compact.

This structure is so ingeniously contrived, that it has not only all the extent, and all the solidity, which are requisite, but also a form the most proper for confining the water, and, when it has passed its bounds, for maintaining its weight, or baffling its attacks. At the top of their dike or mole, that is, at the part where it is least thick, they form two or three openings. These they occasionally enlarge or contract, as the river occasionally rises or falls; and when, from inundations either too powerful or too sudden, their works have been damaged, they are, with the utmost diligence and application, on the retreat of the waters, immediately repaired.

After this display of their labors to accomplish a public work, it would be superfluous to add to it a description of their private constructions, were it not that, in history, an account should be given of every fact, and that, in this first

grand work of the Beaver, the intention uniformly is, that the little habitation of each family should be rendered more commodious.

This habitation is always furnished with two passages, one for the purpose of a land, and the other of a water excursion. In shape it is almost always either oval or round; sometimes it is from four to five feet in diameter, and sometimes it consists of two, and even three stories, while the walls are always two feet thick. When it happens to consist of but one story, the walls are but a few feet high, over which there is a kind of vault, that terminates the edifice, and serves as a covering for it. It is constructed with such solidity as to be impenetrable to the heaviest rains, to defy the most impetuous winds, and is plastered with such neatness, both outwardly and inwardly, that one might actually suppose it to be the work of man. These animals, nevertheless, use no instrument for the preparation of their mortar, but their feet, or for the application of it, but their tails. They chiefly use such materials as are not easily dissolved by water. Their wooden work consists of such trees as grow on the banks of rivers, as these are most easily cut down, stripped of their bark and carried; and all these operations they perform before they relinquish a tree which they have once attacked. They cut it at the distance of a foot or a foot and a half from the ground.— They sit as they work; and, beside the advantage of this convenient posture, they have the pleasure of continually gnawing fresh bark and soft wood, both which they prefer to most other kinds of aliment. Averse to dry wood, they always provide an ample store of these for their subsistence during the winter. The space allotted for the provision of eight or ten Beavers occupies from twenty-five to thirty feet square, and from eight to ten feet deep. It is near their habitations that they establish their magazines; and to each hut or cabin there is one allotted, of a size proportioned to the number of its inhabitants, to which they have

all a common right ; nor do they offer to plunder their neighbors.

Hamlets, so to express them, have been seen, composed of twenty and even twenty-five dwellings. Such large settlements, however, are rare. In general, they do not contain more than ten or a dozen families, each of which has its own separate district, magazine, and habitation ; nor will it allow any strangers to settle within its enclosure. The smallest dwellings contain two, four, and six ; the largest, eighteen, twenty, and it is even said thirty beavers ; and it seldom or never happens that the number of males and females is not upon a par. Moderately speaking, therefore, their society may be said to consist frequently of one hundred and fifty or two hundred workmen, who, having first exerted their united industry and diligence in rearing a grand public work, afterwards form themselves into different bodies, in order to construct private habitations.

However numerous the republic of Beavers may be, peace and good order are uniformly maintained in it. A common series of toil has strengthened their union ; the conveniences which they have procured for each other, and the abundance of provisions which, after having amassed, they continue to consume together, render them happy within themselves ; and, having moderate appetites, entertaining even an aversion to blood and carnage, they have not the smallest propensity to hostility or rapine, but actually enjoy all the blessings which man is only born to desire. Friends to each other, if threatened by any enemies from abroad, they know how to avoid them ; and for this purpose, on the first alarm, they give notice of their mutual danger, by striking the water with their tails, which sends forth a sound that is heard in their most distant dwellings. On this occasion, each Beaver, as he thinks most expedient, plunges into the water, or conceals himself within the walls of his own habitation, which is in no dan-

ger but from the fire of the angry heavens, or from the weapons of man, and which no animal dares attempt to open or to overturn.

These asylums are not only secure, but also very neat and commodious. The floor is covered with verdure, young and tender branches of trees serving them as a carpet, on which they never permit any of their excrements to be left. The window which fronts the water serves them as a balcony, from which they enjoy the fresh air, and bathe themselves the greatest part of the day. In the water they remain in an upright posture, the head and fore parts only being visible. This element is, indeed, so necessary to them, or rather gives them so much pleasure, that they seem unable, as it were, to live without frequent immersions in it. Sometimes they go to a considerable distance under the ice ; and then they are easily taken, by attacking the dwelling on one hand, and laying in wait for them, at the same time, at a hole which is purposely formed a little way off in the ice, and to which they are obliged to come for breath.

The habit which this animal has, of continually keeping the tail and all the hind parts of the body in the water, seems to have changed the nature of its flesh. That of the fore parts, till we come to the reins, is of the same quality, taste, and consistency as the flesh of land animals ; that of the tail, and of the hind legs and thighs, has the smell, the savor, and all the qualities of fish. As for the tail, in particular, it is even an extremity, an actual portion, of a fish fixed to the body of a quadruped. In length it generally measures a foot, in thickness an inch, and in breadth five or six inches. It is entirely covered over with scales, and has a skin altogether the same as that of a large fish.

The females are said to go four months with young. They bring forth about the close of winter, and their number generally consists of two or three at a time. Nearly at this period the males leave them, and go forth into the

fields, where they enjoy all the sweets of the spring. In this season they pay occasional visits to their habitation, but never reside in it. There, however, the females remain employed in suckling, tending, and rearing their little ones, who are in a condition to follow them at the expiration of a few weeks. They then, in their turn, go abroad, where they feed on fish, or on the bark of young trees, and pass the whole of their time upon the water or among the woods.

Winter is the season which is principally allotted for hunting them, as it is then only that their fur is in perfection; and when, after their fabrics are demolished, a great number happen to be taken, their society is never restored; the few that have escaped captivity or death, disperse themselves, and become houseless wanderers; or concealed in some hole under ground, and reduced to the condition of other animals, they lead a timid life, no longer employ themselves but to satisfy their immediate and most urgent wants, no longer retain those faculties and qualities which they eminently possess in a state of society.

We meet with Beavers in America from the thirtieth degree of north latitude to the sixtieth, and even beyond it. In the northern parts they are very common; and the farther south we proceed, their number is still found to decrease. The same observation holds with respect to the Old Continent: we never find them numerous but in the more northern countries; and in France, Spain, Italy, Greece, and Egypt, they are exceedingly rare. They formerly inhabited both England and Wales, but have long been extinct in both. They must, however, have been uncommon, as in the tenth century, the Welsh laws valued a Beaver skin at the enormous sum of a hundred and twenty pence. The ancients knew them; and by the religion of the Magi it was forbidden to kill them.

Several authors have said, that the Beaver, being an aquatic animal, could not live solely on land. This opinion,

however, is erroneous ; for the Beaver which was mentioned in a preceding paragraph, having been taken when quite young in Canada, and always reared in the house, did not know the water when he was brought to it, was afraid of it, and refused to go into it. Even when first plunged into a basin, there was a necessity for keeping him in it by force. A few minutes after, nevertheless, he became so well reconciled to it, that he no longer showed an aversion to his new situation ; and, when afterwards left to his liberty, he frequently returned to it of himself, and would even roll about in the dirt, and upon the wet pavement. One day he made his escape, and descended by a cellar staircase into the quarries under the Royal Garden. There he swam to a considerable distance on the stagnated waters which are at the bottom of those quarries ; yet no sooner did he see the light of the torches which were ordered down for the purpose of finding him, than he returned, and allowed himself to be taken without making the smallest resistance.

He is an animal familiar without being fawning ; and when he sees people at table, he is sure to ask for something to eat. This he does by a little plaintive cry, and by a few gestures of his fore paws. When he has obtained a morsel, he carries it away, and conceals himself, in order to eat it at his ease. In several instances he has been completely domesticated, and become as docile as a dog. When he sleeps, which he does very often, he lies upon his belly. No food comes amiss to him, meat excepted ; and this he constantly refuses, either raw or boiled. He knows every thing he comes near ; and it was found necessary to line with tin the tun in which he was brought over.

Independently of the fur, which is indeed the most valuable article furnished by the Beaver, this animal furnishes a substance that has been considerably used in medicine. This substance, which is known by the name of *castor*, is

contained in two bladders. It is pretended that the Beavers extract the liquid which is contained in these bladders, by pressing them with the foot; and that it gives them an appetite when they are averse to food. The truth, however, seems to be, that the animal uses this liquid in order to grease its tail. The savages, it is said, obtain an oil from the tail of the Beaver, which they employ as a topical remedy for different complaints. The flesh of this animal, though fat and delicate, is yet bitter, and disagreeable to the palate.

There are two kinds of hair on the skin of the Beaver; that next the skin is short, and as fine as down; the upper coat is scantier, thicker and longer. The downy hair is manufactured into hats, stockings, caps, and other articles. The skin is so considerable an article of traffic, that the species which produces it will, perhaps, at length, be exterminated. At one sale, the Hudson's Bay Company sold about fifty-four thousand; and, in 1798, a hundred and six thousand were exported to Europe and China from Canada alone.

The senses of the Beaver are very acute; and so delicate is its smell, that it will suffer no filth, no bad stench, to remain near it.

THE QUAIL.

PLATE XV.

Class—Aves. *Order* IV.—Gallinacea. Resembling the Hen. *Genus*—Perdix.

This well-known bird is a general inhabitant of North America, from the northern parts of Canada and Nova Scotia, in which latter place it is said to be migratory, to the extremity of the peninsula of Florida; and was seen in the neighborhood of the Great Osage village, in the interior of Louisiana. They are numerous in Kentucky and Ohio; Mr. Pennant remarks, that they have been lately introduced into the island of Jamaica, where they appear to thrive greatly, breeding in that warm climate twice in the year. Captain Henderson mentions them as being plenty near the Balize, at the Bay of Honduras. They rarely frequent the forest, and are most numerous in the vicinity of well cultivated plantations, where grain is in plenty.—They, however, occasionally seek shelter in the woods, perching on the branches, or secreting among the brush wood; but are found most usually in open fields, or along fences sheltered by thickets of briars. Where they are not too much persecuted by the sportsmen, they become almost half domesticated; approach the barn, particularly in winter, and sometimes in that severe season mix with the poultry, to glean up a subsistence. They remain with us the whole year, and often suffer extremely by long hard winters, and deep snows. Indeed, it often happens that whole coveys are found frozen to death, or so extremely reduced, as not possessing sufficient power to fly. An instance of this kind occurred in the centre of the city of Philadelphia. In the very severe winter of 1828, a quantity of rubbish was removed from the large lot of ground at the corner of Eleventh and Market-streets, under which a co-

1871. *Phasianus Chukko* *Chukko* *Chukko*



2020

vey of quails was discovered in so weak and famished a state, as to be taken by the hand. These birds, it is supposed, were hatched in this lot the preceding summer, as persons residing in that vicinity heard them frequently whistling through the season. During these protracted snows, the arts of man combine with the inclemency of the season for their destruction, and to the ravages of the gun are added others of a more insidious kind. Traps are placed on almost every plantation, in such places as they are known to frequent. These are formed of lath, or thinly split sticks, somewhat in the shape of an obtuse cone, laced together with cord, having a small hole at top, with a sliding lid, to take out the game by. This is supported by the common figure 4 trigger, and grain is scattered below, and leading to the place. By this contrivance ten or fifteen have sometimes been taken at a time. But a more barbarous, and as equally successful a mode is employed by many to entrap them, by fixing snoods made of horse-hair across the paths and furrows of such fields and thickets as are frequented by these birds, especially their roosting grounds. This is done by driving into the ground small stakes, about ten inches in length, and two inches apart, to the distance of five or six feet, similar to a fence, leaving the spaces where the snoods are suspended much wider, and to the number, perhaps, of four or five. The quails, in running the path, find this impediment, and attempt to pass through the wider spaces, and are caught by the neck, where they often remain in this cruel and most tormenting situation for days. These are sometimes brought alive to market, and occasionally bought up by sportsmen, who, if the season be very severe, sometimes preserve and feed them till spring, when they are humanely turned out to their native fields again, to be put to death, at some future time, *secundem artem*.

The Quail begins to build early in May. The nest is made on the ground, usually at the bottom of a thick tuft

of grass that shelters and conceals it. The materials are leaves and fine dry grass, in considerable quantity. It is well covered above, and an opening left on one side for entrance. The female lays from fifteen to twenty-four eggs, of a pure white without any spots; and during the period of incubation are remarkably tenacious of their nest, for rather than forsake it, they will frequently sacrifice their lives, and it is by no means an uncommon occurrence for them to fall victims to the scythe. The time of incubation has been stated to me by various persons at four weeks, when the eggs were placed under the domestic hen. The young leave the nest as soon as they are freed from the shell, and are conducted about in search of food by the female; are guided by her voice, which at that time resembles the twittering of young chickens, and sheltered by her wings, in the same manner as those of the domestic fowl; but with all that secrecy and precaution for their safety, which their helplessness and greater danger require. In this situation, should the little timid family be unexpectedly surprised, the utmost alarm and consternation instantly prevail. Sometimes, when an enemy approaches, (especially the sportsman's dog,) the mother will instantly squat herself, and collect her little brood under her wings for protection, and at this time she will remain so perfectly tranquil as to permit the hand almost to grasp her, before she will attempt to escape; she will then throw herself in the path, fluttering along, and beating the ground with her wings, as if sorely wounded, using every artifice she is master of, to entice the passenger in pursuit of herself, uttering at the same time certain peculiar notes of alarm, well understood by the young, who dive separately amongst the grass, and secrete themselves till the danger is over; and the parent, having decoyed the pursuer to a safe distance, returns, by a circuitous route, to collect and lead them off. This well-known manœuvre, which nine times in ten is successful, is honorable to the feelings and

judgment of the bird, but a severe satire on man. The affectionate mother, as if sensible of the avaricious cruelty of his nature, tempts him with a larger prize, to save her more helpless offspring; and pays him, as avarice and cruelty ought always to be paid, with mortification and disappointment.

The eggs of the Quail have been frequently placed under the domestic hen, and hatched and reared with equal success as her own; though, generally speaking, the young quails, being more restless and vagrant, often lose themselves, and disappear. The hen ought to be a particularly good nurse, not at all disposed to ramble, in which case they are very easily raised. Those that survive acquire all the familiarity of common chickens; and there is little doubt, that if proper measures were taken, and persevered in for a few years, that they might be completely domesticated. These birds have been often kept during the first season, and through the whole of the winter, but have uniformly deserted in the spring. Two young quails that were brought up by a hen, when abandoned by her, associated with the cows, which they regularly followed to the fields, returned with them when they came home in the evening, stood by them while they were milked, and again accompanied them to the pasture. These remained during the winter, lodging in the stable, but as soon as spring came, they disappeared.

It has been frequently asserted, that the Quails lay occasionally in each other's nests. This is not altogether improbable, from the fact, that they have often been known to drop their eggs in the nest of the common hen, when that happened to be in the fields, or at a small distance from the house. The two Quails above mentioned were raised in this manner; and it was particularly remarked (by the lady who gave the information,) that the hen sat for several days after her own eggs were hatched, until the young Quails made their appearance.

The Quail, on her part, has sometimes been employed to hatch the eggs of the common domestic hen. A gentleman says, that of several hen's eggs which he substituted in place of those of the Quail, she brought out the whole ; and that for several weeks he occasionally surprised her in various parts of the plantation, with her brood of *chickens* ; on which occasions she exhibited all that distressful alarm, and practised her usual manœuvres for their preservation. Even after they were considerably grown, and larger than the Quail herself, she continued to lead them about : but, though their notes, or call, were those of common chickens, their manners had all the shyness, timidity, and alarm of young Quails ; running with great rapidity, and squatting in the grass, exactly in the manner of the Quail. Soon after this they disappeared, having probably been destroyed by dogs, by the gun, or by birds of prey. Whether the domestic fowl might not by this method be very soon brought back to its original savage state, and thereby supply another additional subject for the amusement of the sportsmen, will scarcely admit of a doubt. But the experiment, in order to secure its success, would require to be made in a quarter of the country less exposed than ours to the ravages of guns, traps, dogs, and the deep snows of winter, that the new tribe might have full time to become completely naturalized, and well fixed in all their native habits.

About the beginning of September, the Quails being now nearly full grown, and associated in flocks, or coveys, of from four or five to thirty, afford considerable sport to the gunner. And, perhaps, of all the feathered tribe which inhabit this country, none are persecuted with so much untiring vigor, as this interesting little bird ; the delicacy of its flesh, its domestic qualities, and source of profit, seems to mark it for that destruction which continually awaits it.

Ranking high in our scale of game, and being univer-

sally found in this country, the Quail, by its familiar habits, invites the sportsman, who pursues it as a source of pleasurable recreation, superior to all others; and thus, between man, hawks, and vermin, is a continual war waged against this harmless bird, and every succeeding year adds to the number and avidity of its enemies, but so great is the fecundity of the Quail, that instead of decreasing in quantity, they appear to thrive, and multiply, in despite of the system of extermination carried on against them.—The most are killed by man, and he may be fairly considered their greatest enemy; but, the Quail is more fearful of the hawk, for when pursued by this destructive bird, terror overcomes its instinct, and it will oftentimes fly, unmindful of the consequences, against a tree or house with so much force, as to be killed; in fact, frequently their whole muscular powers become so paralyzed by dread, that it will suffer itself to be trodded upon, or taken, without making an effort to escape.

At this time, the notes of the male are most frequent, clear, and loud. His common, or early call, consists of two notes, with sometimes an introductory one, and is similar to the sound produced by pronouncing the words "Bob White." This call may be easily imitated by whistling, so as to deceive the bird itself, and bring it near. While uttering this, he is usually perched on a rail of the fence, or on a low limb of an apple tree, where he will sometimes sit, repeating at short intervals, "Bob White," for half an hour at a time. It, however, is only practised after pairing in the spring, and continues through the summer, until about the middle of August, when it is substituted by another call, which is used by them until the time of pairing comes on again. When a covey are assembled in a thicket or corner of a field, and about to take wing, they make a low twittering sound, not unlike that of young chickens; and when the covey is dispersed they are called

together again by a loud and frequently repeated noise, peculiarly expressive of tenderness and anxiety.

About the first of October they prepare for winter quarters, and at this time commences what is called their *running season*, a singular habit of this bird, and may be accounted for, in some measure, as follows. In open and well cultivated grounds, their food and cover are destroyed by the husbandmen, who turn the soil in order to put in his winter's grain; added to this are the few watering places and swamps, to afford them the means of life and protection; consequently, the birds, impelled by instinct, seek those places in low and swampy countries, where they can always procure water, and shelter from their enemies and the severity of winter.

The food of the Quail consists of grain, seeds, insects, and berries of various kinds. Buckwheat and Indian corn are particular favorites. In September and October the buckwheat fields afford them an abundant supply, as well as a secure shelter. They usually roost at night in the middle of a field, on high ground; and from the circumstance of their dung being often found in such places, in one round heap, it is generally conjectured that they roost in a circle, with their heads outward, each individual in this position, forming a kind of guard to prevent surprise. They also continue to lodge for several nights in the same spot.

The majority of Quails in a covey, are males; hence, in the pairing season, it frequently happens that two cocks claim the same hen, and decide their right by combat, upon the truest principles of honor. A gentleman who was an eye-witness to a battle between two male Quails, stated that it lasted for a considerable time. His attention was attracted by a rustling noise in the bushes, accompanied with a twittering sound; and, examining into the cause, he perceived these birds in close combat. After

some time, one bird ran off to a considerable distance, and was followed closely by his antagonist, when they wheeled about, and returned to the same spot, where they renewed the fight with increasing vigor; then, in turn, the other bird acted in a similar manner, by running away, being chased by his antagonist; and in this way the battle was protracted for half an hour, and until the contending parties became so exhausted, that our friend put an end to the contest, by making them prisoners.

The Quail, like all the rest of the gallinaceous order, flies with a loud whirring sound, occasioned by the shortness, concavity, and rapid motion of its wings, and the comparative weight of its body. The steadiness of its horizontal flight, however, renders it no difficult mark for the sportsman, particularly when assisted by his sagacious pointer. The flesh of this bird is peculiarly white, tender, and delicate, unequalled, in these qualities, by that of any other of its genus in the United States.

The Quail, as it is called in New England, or the *Partridge*, as in Pennsylvania, is nine inches long, and fourteen inches in extent; and will usually weigh from seven to eight, and sometimes nine ounces, each; the bill is black; line over the eye, down the neck, and whole chin, pure white, bounded by a band of black, which descends, and spreads broadly over the throat; the eye is dark hazel; the crown, neck, and upper part of the breast, red brown; sides of the neck spotted with white and black, on a reddish brown ground; back, scapulars, and lesser coverts, red brown, intermixed with ash, and sprinkled with black; tertials edged with yellowish white; wings plain and dusky; lower part of the breast and belly, pale yellowish white; beautifully marked with numerous curving spots, or arrow heads, of black; tail ash, sprinkled with reddish brown; legs very pale ash.

The female differs in having the chin and sides of the head yellowish brown, in which dress it has been described as a different kind. There is, however, only one species of Quail at present known within the United States.

The following account of an attempt made by a gentleman in Boston, to domesticate the Quail, may not be uninteresting to many of the readers of the History.

He says: "I had been passing a few weeks in the country, about fifteen miles from this city, and was out one morning in pursuit of woodcock, when my dog came upon a dead point, in an open meadow, upon a bird not twelve feet beyond him. Surprised at the apparent tameness or stupidity of the bird, I approached with a view of taking it, if possible, alive; and I was able to advance within about six feet of her, before she flew. I then perceived it was a Quail upon her nest, which contained fifteen young, apparently not more than a day old. I thought this would be an excellent opportunity of making an experiment I had long wished for—of domesticating the Quail; and, therefore, notwithstanding my compunctions of conscience in thus bereaving the distressed mother of her offspring, I took them up, nest and all, and carried them home, accompanied by their mother, who was continually uttering the most violent outcries, as if to reproach me with my cruelty. When I arrived at home, I put the nest, with all its contents, in a large cage, and suspended it from a limb of an apple tree, out of the way of cats and other enemies of the feathered tribe. I then retired to a distance, leaving the door of the cage open, for the purpose of observing whether the mother would enter to feed her young, or desert them entirely. The moment I was out of sight, she flew on the top of the cage, looking down through the wires with the greatest apparent agony, and making every attempt to get through: at last, having succeeded in finding the door, she entered, and, having caressed them for a few moments, she flew off for food, but soon returned, and

became apparently well pleased with her new residence, where she remained the whole of that day and night, and part of the next ; then she was seen no more ; whether she was killed, or sacrificed her offspring to the fears for her own safety, I know not ; but after waiting till night-fall, without seeing or hearing from her, I took the fifteen young Quails under my own care. They bore the closest possible resemblance to, and had all the manners of chickens,—the same chirp, and, in a day or two, the same way of pecking when let into the yard. Their food, for the first day or two, was given them in small pills, of the size of a pea, and consisted of dough ; in three days from the time they were taken, they fed themselves in the manner of fowls ; *one*, the largest, and apparently the oldest, acting as leader or father of the flock, which they followed as young chickens do a mother. Their extreme youth when taken, and the manner of their bringing up, had obliterated all recollection of their mother, and destroyed all fear of man,—they ran to me at the sound of my voice as they would to the call of their own parent. I kept them now in a box lined with raw cotton : they grew and prospered wonderfully, being extremely lively, and always washing and dressing themselves when the sun was warm, and being much tamer than young chickens. I kept them in this way for six weeks, till the nights became quite cool, when, it being impossible to supply the natural warmth of their mother by cotton, one cold night killed eight of them. I then placed the box on a warm stove, which would preserve the heat during the day, and the early part of the night ; but it being impossible to keep it exactly regulated all night, the cold again affected them, and one by one they died. If I had taken them in the spring, instead of the fall, I have no doubt my experiment would have succeeded.

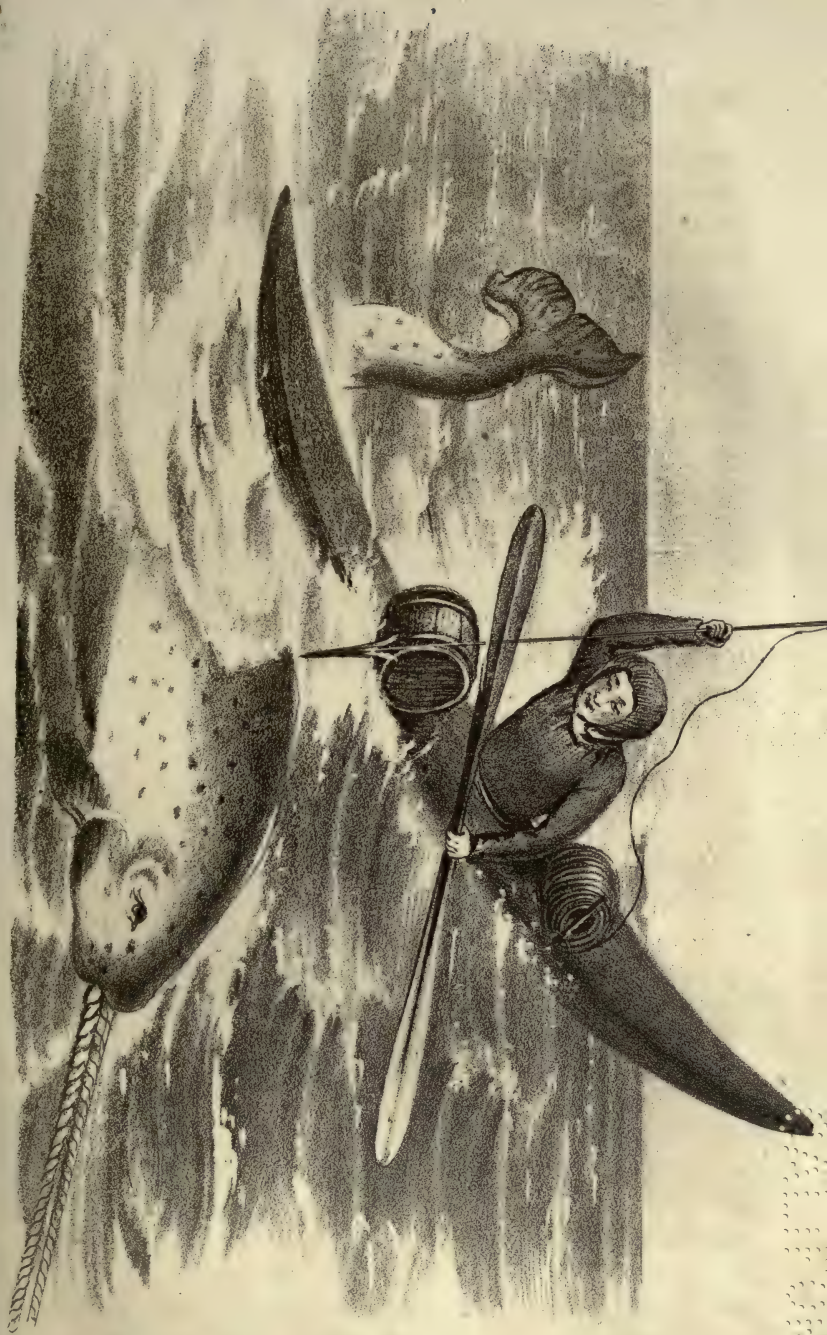
THE NARWHAL.

PLATE XVI.

Class—Mammalia. *Order* X.—Cetaceæ: the Whale kind. *Geuns*—Monodon.

AMONG the Cetaceæ inhabiting the dreary realms of the Polar Ocean, the Narwhal, if not the largest, or among the largest, is, nevertheless, one of the most remarkable: its general form resembles that of the porpoises; it has, however, no teeth, properly so called, but two ivory tusks, or spears, implanted in the intermaxillary bone, but of which the right remains usually rudimentary and concealed during life. The left tusk, on the contrary, attains to the length of from five to seven and eight, and sometimes ten feet in length, and projects from the snout in a right line with the body, tapering gradually to a point, with a spiral twist (rope-like) throughout its whole extent. In its structure and growth, this tusk resembles that of the elephant, being hollow at its base, or root, and solid at its extremity. It is in the male only that this spear-like weapon, under ordinary circumstances, becomes duly developed, the females (and, indeed, the young males,) having the left, as well as the right tusk, concealed within its bony socket. This rule, however, is not invariable, for females have not only been seen with the left tusk projecting, but the right also; and we may credit the account of Lacepede, who states that Capt. Dirck Peterson, commander of a vessel called the Golden Lion, brought to Hamburgh, in 1689, the skull of a female narwhal, having two tusks implanted in it, of which the left measured seven feet five inches, and the right seven feet. It may be added, that Capt. Scoresby brought home the skull of a female narwhal, in which both tusks projected, though only to the distance of two and a quarter inches, and

W. A. N. P.



2000

which was examined by Sir E. Home. Nor with respect to the male, must it be supposed that the right tusk never becomes developed ; for, on the contrary, instances sometimes occur, in which the right tusk projects externally nearly as far as the left ; and there are grounds for supposing that when the left becomes lost, or broken by accident, the right tusk becomes developed to supply the deficiency. Sir E. Home, indeed, regards the right rudimentary tusk (as it is usually found) to be nothing more than a milk-tusk, or, in other words, a deciduous tooth, not yet lost or shed, and waiting for the developement of a permanent tusk (should its developement be called for by circumstances), to be driven gradually forward, and so fall out. He observes, that “ as the permanent tusk in the narwhal begins to form in a direct line, immediately behind the origin of the milk-tusk, the great purpose of the milk-tusk is evidently to open the road for it, and to direct the course of the permanent tusk, till it is completely pushed out by it.

Its usual length is about nine inches. Cuvier, speaking of the tusks of this animal, says : “ It has, indeed, the germ of two tusks, but it is very seldom that both grow equally. In general it is only that on the left side which becomes developed, while that on the right remains, during the whole of the creature’s life, concealed within its own alveolus.” The tusk or spear of the narwhal constitutes a powerful weapon, which it is reported to use with terrible effect. It is, however, its only weapon ; for it has neither the formidable teeth of the grampus, nor of the cachalot. Crantz thus describes the “ *monoceros*, also called *narvhal*. ” “ This species is commonly twenty feet long, and has a smooth black skin, sharp head, and little mouth. A round double-twisted horn runs straight out from the left side of the upper lip. It is commonly ten feet long, as thick as one’s arm, hollow inside, and composed of a white solid substance. It is probable he uses

this horn to get at the sea-grass, which is his proper food ; and also to bore a hole in the ice with it when he wants fresh air ; possibly, also, as a weapon against his enemies. Another little horn, a span long, lies concealed in the right side of his nose, which probably is reserved for a fresh supply, if some accident should deprive him of the long one ; and they say that as a ship was once sailing at sea, it felt a violent shock, as if it had struck upon a rock, and afterwards one of these horns was found fastened in it. Formerly these horns or tusks were looked upon to be the horns of the fabulous land-unicorn, and therefore they were valued as an inestimable curiosity, and sold excessively dear, till the Greenland fishery was set on foot, when they found them in the northern parts of Davis' Straits, in greater plenty than anywhere ; yet for some time they carried on the cheat. They are so common in the north of Greenland, that the natives, for want of wood, make rafters for their houses of them ; yet how unknown and valuable they were, even towards the close of the last century, may be seen, with several particular remarks, from La Peyrere. Some have been caught with two horns of an equal length, but these must be very rare. This fish has two nostrils in the bone, but they run into one aperture in the external skin. It has good blubber, swims with great velocity, though it has only two small fins, and can be only struck when there are a great number together, and they hinder one another with their horns."

The use assigned to the tusk of the narwhal by Crantz, viz. : that of uprooting marine vegetables on which to feed, is altogether a supposition. As the male only has this instrument developed, or generally the male, the female must be reduced to sad difficulties in the procuring of food ; but, in truth, the position of the tusk renders such a use as is here attributed to it impossible. Moreover, it does not appear to subsist on marine fuci, or algæ, but on soft animal matters, as mollusks and fish. Capt.

Scoresby found the remains of cuttle-fish in the stomachs of several which were opened by him, and similar remains were also found in the stomach of one driven ashore near Boston. As in the case of many animals of which the males have tusks, or horns, or antlers, and the females none, the tusks of the narwhal are most probably to be regarded principally as a mark of sexual distinction, and secondarily as weapons of defence. The usual length of the narwhal does not exceed sixteen or eighteen feet, exclusive of the tusk, though it is occasionally found larger.

Mr. Sowerby, in his "British Miscellany," states that the individual driven ashore, in 1800, near Boston in Lincolnshire, was twenty-five feet long : it had two tusks, five feet six inches long. It was formerly supposed that the ivory of this animal was an antidote against pestilential maladies : and various authors have entered into this subject. It is said that the kings of Denmark had a throne composed entirely of narwhal's tusks, in the Chateau de Rosenburg. This superstition reminds us of the value of the horn of the rhinoceros in the East, cups made of which were said to give evidence of the presence of poison in the liquid they contain. Few, we believe are now so credulous as to attribute miraculous virtues to the ivory tusks of any animal. Those of the narwhal are, however, valuable from the closeness of their texture, and their great hardness. In general form, as we have said, the narwhal resembles the porpoise, or grampus ; but the head is small and blunt. The mouth is small, and not capable of much extension. The under-lip is wedge-shaped. The eyes are placed in a line with the opening of the mouth, at the distance of fourteen or fifteen inches from the snout, and of small size, being about an inch in diameter. The spiracle, or blow-hole, is a single orifice, of a semicircular form, on the top of the head, directly over the eyes. The fins, or flippers, are about fourteen or fif-

teen inches long, and from six to eight broad, their situation on the sides of the animal being at one-fifth of its length from the snout. The breadth of the tail is from fifteen to twenty inches. There is no dorsal fin, but a sharp ridge runs down the centre of the back, the edge of which is generally found to be rough and worn, as if by rubbing against the ice. Crantz describes the narwhal as being black: it is only in young specimens that this color can be said to prevail; at an early age the narwhal is blackish gray on the back, with numerous darker spots and markings running into each other, forming a general dusky-black surface. The sides are almost white, with dusky and more open markings: the under surface is white. In adult specimens the ground color of the back is yellowish white, with markings varying from dark gray to dusky-black, and of a roundish or oval figure, with interspaces of white or yellowish white between them. The skin resembles that of the common Greenland whale, but is thinner. The female narwhal produces a single young one at a birth, which she nourishes with milk for several months: the teats are situated near the origin of the tail.

To the rapidity, the great powers, and the ferocity of the narwhal when attacked, many writers have borne testimony. Its form is admirably adapted for cleaving the waters; and we can well believe that the shock of its weapon, driven full tilt against an enemy, must produce a terrible effect. The ribs of the stoutest boat would be transfixed by the dint of such a blow, far more easily than was ever shield by the lance of knight in battle or tournament. Several instances have, indeed, been known, in which the animal has plunged his weapon deep into the thick oak timbers of a ship, when it has fortunately snapped short, the fragment remaining fixed in the orifice, so as to plug it up. A portion of wood taken from the hull of a ship, with a piece of narwhal's tusk firmly imbedded in it, came some few years ago under our own inspection. It

is probably only in defence of the females and their young, unless, indeed, when attacked himself, that the male narwhal thus rushes against ships or boats; for we utterly discredit the usual accounts of its causeless and indiscriminate attacks upon any object which approaches within its range. Doubtless when wounded and harassed it becomes desperate; and its power, its velocity, and its weapon, combine to render it formidable.

The narwhal is gregarious, associating in troops of from six or eight to twenty or more; and numbers are often seen clustered together, both in the open sea, and in bays and inlets free from the ice, forming a compact phalanx, moving gently and slowly along. Under such circumstances the independent movements of each individual are necessarily embarrassed, so that a considerable slaughter may be easily effected among them. When attacked at such a time, the hind ranks, instead of turning against their assailants, press upon those before, sliding their long weapons over the glossy backs of their leaders, and all becomes disorder and confusion. Opportunities of this kind are welcome to the Greenlanders, to whom the narwhal is an important animal. Independently of the oil, which the narwhal yields in considerable quantity, and of excellent quality, the flesh is much esteemed by these people as food, and eaten both fresh and in a dried and smoked state, being prepared over the fire of their huts. The tendons of the muscles are useful in the preparation of thin but tough cordage; and Duhamel states that several membranous sacs obtained from the gullet, are made use of as parts of their fishing apparatus. The ivory spear, or tusk, the Greenlanders employ in various household and economical purposes, instead of wood, and in the manufacture of weapons, as darts, arrows, &c. When struck by a harpoon, the narwhal dives with great velocity, and in the same manner as the whale, but not to the same extent. In general it descends about two hundred fathoms;

and, on returning to the surface, is dispatched by a whale-lance without any difficulty. The blubber is about three inches in thickness, and invests the whole body. It affords about half a ton of oil.

The origin of the word narwhale, narwhal, or narwal, is said to be from the Teutonic *nar*, or *ner*, which signifies a beak, or projecting snout, and *wal*, *wale*, or *whale*, an indiscriminate word, in the same great family of languages, for any of the Cetaceæ. Many writers consider that two distinct species of this animal exist, the *Monodon microcephalus* being different from the *M. monoceros*, and such is the opinion of Dr. Fleming. Cuvier, however, and other naturalists, regard the *M. microcephalus* as identical with the *M. monoceros*.

1 1 1 1 1
2 2 2 2 2
3 3 3 3 3
4 4 4 4 4
5 5 5 5 5
6 6 6 6 6
7 7 7 7 7
8 8 8 8 8
9 9 9 9 9
10 10 10 10 10
11 11 11 11 11
12 12 12 12 12
13 13 13 13 13
14 14 14 14 14
15 15 15 15 15
16 16 16 16 16
17 17 17 17 17
18 18 18 18 18
19 19 19 19 19
20 20 20 20 20
21 21 21 21 21
22 22 22 22 22
23 23 23 23 23
24 24 24 24 24
25 25 25 25 25
26 26 26 26 26
27 27 27 27 27
28 28 28 28 28
29 29 29 29 29
30 30 30 30 30
31 31 31 31 31
32 32 32 32 32
33 33 33 33 33
34 34 34 34 34
35 35 35 35 35
36 36 36 36 36
37 37 37 37 37
38 38 38 38 38
39 39 39 39 39
40 40 40 40 40
41 41 41 41 41
42 42 42 42 42
43 43 43 43 43
44 44 44 44 44
45 45 45 45 45
46 46 46 46 46
47 47 47 47 47
48 48 48 48 48
49 49 49 49 49
50 50 50 50 50
51 51 51 51 51
52 52 52 52 52
53 53 53 53 53
54 54 54 54 54
55 55 55 55 55
56 56 56 56 56
57 57 57 57 57
58 58 58 58 58
59 59 59 59 59
60 60 60 60 60
61 61 61 61 61
62 62 62 62 62
63 63 63 63 63
64 64 64 64 64
65 65 65 65 65
66 66 66 66 66
67 67 67 67 67
68 68 68 68 68
69 69 69 69 69
70 70 70 70 70
71 71 71 71 71
72 72 72 72 72
73 73 73 73 73
74 74 74 74 74
75 75 75 75 75
76 76 76 76 76
77 77 77 77 77
78 78 78 78 78
79 79 79 79 79
80 80 80 80 80
81 81 81 81 81
82 82 82 82 82
83 83 83 83 83
84 84 84 84 84
85 85 85 85 85
86 86 86 86 86
87 87 87 87 87
88 88 88 88 88
89 89 89 89 89
90 90 90 90 90
91 91 91 91 91
92 92 92 92 92
93 93 93 93 93
94 94 94 94 94
95 95 95 95 95
96 96 96 96 96
97 97 97 97 97
98 98 98 98 98
99 99 99 99 99
100 100 100 100 100



Ostrich Chase.

THE OSTRICH.

PLATE XVII.

Class—Aves. *Order V.*—Grallatoriæ : Waders. *Genus*—Struthio.

UNEQUALLED in stature among birds, strikingly peculiar in its form, singular in its habits, and eagerly sought after as furnishing in its graceful plumes one of the most elegant among the countless vanities both of savage and civilized life, the Ostrich has always excited a high degree of interest in the minds even of the most superficial observers.—But far more strongly does this feeling prevail in that of the reflecting naturalist, who does not regard this gigantic bird as an isolated portion of the great system of nature, but perceives in it one of the most remarkable links in the complicated chain of the creation, too often invisible to human scrutiny, but occasionally too obvious to be overlooked, which connect together the various classes of animated beings. With the outward form and the most essential parts of the internal structure of Birds, it combines in many of its organs so close a resemblance to the Ruminating Quadrupeds, as to have received, from the earliest antiquity, an epithet indicative of that affinity which later investigations have only tended more satisfactorily to establish. The name of Camel-Bird, by which it was known, not only to the Greeks and Romans, but also to the nations of the East; the broad assertion of Aristotle, that the Ostrich was partly Bird and partly Quadruped; and that of Pliny, that it might almost be said to belong to the Class of Beasts; are but so many proofs of the popular recognition of a well authenticated zoological truth.

The Ostrich, in fact, is altogether destitute of the power of flight, its wings being reduced to so low a degree of development as to be quite incapable of sustaining its

enormous bulk in the air. Its breast-bone is consequently flattened and uniform on its outer surface, like that of a Quadruped, offering no trace of the elevated central ridge so generally characteristic of birds, and so conspicuously prominent in those which possess the faculty of supporting themselves long upon the wing. Its legs, on the contrary, are excessively powerful; and are put in action by muscles of extraordinary magnitude. This muscular power, together with the great length of its limbs, enables it to run with incredible swiftness, and to distance, with little exertion, the fleetest Arabian horses. The total want of feathers on every part of these members, and their division into no more than two toes, connected at the base by a membrane, a structure not unaptly compared to the elongated and divided hoof of the Camel, have always been considered striking points of resemblance between these animals; but there is another singularity in their external conformation which affords a still more remarkable coincidence. They are both furnished with callous protuberances on the chest, and on the posterior part of the abdomen, on which they support themselves when at rest; and they both lie down in the same manner, by first bending the knees, and then applying the anterior callosity, and lastly, the posterior, to the ground. Add to this that, equally patient of thirst, and endowed with stomachs somewhat similar in structure, they are both formed for inhabiting, to a certain extent, the same arid deserts, and it will readily be granted, that the affinity between these animals is not so fanciful as might, at first sight, be imagined.

The family of Birds, of which the Ostrich forms the leading type, is remarkable for the wide dispersion of its several members; each of them vindicating, as it were, to itself, a distinct portion of the surface of the earth. The Ostrich, which is spread over nearly the whole of Africa, is scarcely known beyond the limits of the Arabian deserts, while the Cassowary occupies its place amid the luxuriant

vegetation of the Indian Archipelago. The Emeu is confined to the great Australian Continent, and the Rhea to the southern extremity of the Western Hemisphere. And finally, returning homewards, we find the Bustard, the largest bird of this quarter of the globe, receding, it is true, in some particulars, from the typical form, but still fairly to be regarded as the representative of the family in Europe. Some species, however, belong to the same group with this latter bird, and extend themselves over a considerable portion both of Africa and Asia.

The principal external characters by which the birds above enumerated are connected together, consist in the absence of the hind-toe, of which not even a vestige remain; in the length and power of their legs, which are completely bare of feathers; in the shortness of their wings, and their uselessness as organs of flight; in the length of their necks; and in their strong, blunt, flattened bills. The plumes of the more typical among them are distinguished by the want of cohesion between their barbs, a cohesion which, in other birds, is manifestly subservient to the purposes of flight, and which would, therefore, have been superfluous in these, which never raise themselves above the surface of the ground. Their food is almost entirely vegetable, and consists of seeds and fruits, or, rarely, of eggs and worms. Between the crop, which is of enormous size, and the gizzard, which varies in thickness and power, several of them are furnished with an additional ventricle, analogous to the structure which prevails in Ruminating Quadrupeds. They occupy a station in some degree intermediate between the Rasorial Birds and the Waders, approaching the latter in many particulars of their outward form, but much more closely connected with the former in their internal structure, in their food, and in their habits.

Of the differential characters which give to the Ostrich the rank of a genus, the most important is founded on the

structure of its feet, which have only two toes, both directed forwards, and connected at their base by a strong membrane ; the internal being considerably larger than the external, and being furnished with a thick hoof-like claw, which is wanting in the latter. The legs are covered with a rugged skin, reticulated in such a manner as to present the appearance of large scales : they are completely naked throughout, even in the muscular part, which, like the under surface of the wings, is bare of feathers, and exhibits a flesh-colored tinge. The wings are each of them armed with two plumeless shafts, resembling the quills of a Porcupine. Instead of quill-feathers, they are ornamented with gracefully undulating plumes, and similar appendages terminate the tail. The long neck is covered on its upper half with a thin down, through which the color of the skin is distinctly visible. The head is small in proportion to the magnitude of the bird, and is invested with the same kind of covering as the neck, except on its upper surface, which is bald and callous. The ears are naked on the outside, and hairy within ; the eyes are large and brilliant, and so prominently placed as to enable both to obtain a distinct view of the same object at the same time. They bear a remarkable similarity to the eyes of mammiferous quadrupeds, and have frequently been compared to those of man, which they also resemble in the breadth and mobility of their upper lids, and in the lashes by which these organs are fringed. The beak is short, straight, broad at the base, and rounded at the point, flattened from above, downwards, extremely strong, and opening with a wide gape. The nostrils are seated near the base of the upper mandible, and are partly closed by a cartilaginous protuberance.

The African Ostrich is the only species to which the foregoing characters are applicable. It is generally from six to eight feet in height. The lower part of the neck of the male, and the whole of its body, are clothed with

broad and short feathers, of a deep black, intermingled with a few others, which are nearly white, and are barely visible, except when the plumage is ruffled. In the female the general color of the feathers is of a grayish, or ashy-brown, slightly fringed with white. In both sexes the large plumes of the wings and tail are beautifully white. The bill is of the color of horn, becoming blackish towards the point. The iris is deep hazel. On the head and neck the hairy down is clear white. In the young bird, these parts, as well as the muscles of the legs, are covered like the rest of the body, with ash-colored feathers, which fall off after the first year, and are not again produced.

The character of the Ostrich, like that of other granivorous birds, is extremely mild. It never makes use of its great muscular power to attack, and rarely even in its own defence. It generally has recourse to flight, as its most effectual security against danger; and were its intelligence equal to its velocity, this resource would seldom fail of success. The chase of these birds is accounted one of the most skilful and difficult exercises, both for the Arab and his horse, requiring at once the most unwearied patience, and the most reckless impetuosity. The former is absolutely necessary, in order to keep them within sight, and to watch their motions as they wheel round in a circle of greater or less extent, and the latter to seize the favorable opportunity of dashing down upon them in their course, and disabling them, which is generally effected by means of a stick thrown with dexterity between their legs. A chase of this kind will frequently last from eight to ten hours. When taken, they evince no ill humor; and after a time become in some degree docile, suffering themselves to be mounted and ridden like horses. M. Adanson, who had several times witnessed the spectacle in Senegal, declares, that even when mounted by two men, they outstripped in speed an excellent English horse. In running they always expand their wings, not, as has been erroneously

imagined, to catch the wind in order to assist them in their flight, for they do it indifferently, whether running with or against the wind, but, in all probability, to counterbalance their great height, by the extension of these lateral appendages.

Their natural food consists entirely of vegetable substances, and more especially of seeds and the various kinds of grain, in pursuit of which they frequently commit the greatest devastation among the crops in cultivated countries. But so obtuse is the sense of taste in this bird, that it swallows with the utmost indifference,—sometimes even with greediness, whatever comes in its way, whether of animal or mineral origin, partly for the purpose, as it should seem, of distending its stomach, and partly also to assist, like the gravel in the crops of our common poultry, in the trituration of its food. Its fondness for the metals, in particular, was early remarked, and obtained for it the epithet of the “iron-eating Ostrich.” Popular credulity even went so far as to assign to it the power of digesting these substances; and many are the allusions in our older writers to this fancied property. As an amusing illustration of the prevalence of this belief, we may quote the following characteristic lines from “The Boke of Philip Sparow,” written by Master John Skelton, a laurelled poet of the reign of King Henry the Eighth.

The Estridge that will eate
An horshowe so great
In the stead of meat
Such fervent heat
His stomake doth freat.

We know not if the Ostriches of these days are given to the eating of horseshoes; but unquestionably they have a particular fancy for keys, nails, and other such easily disposed of articles. It would, however, be perfectly ridiculous to imagine that the stomach of this bird is capable of

digesting metals, and converting them into food, although it is undoubtedly true, that after having lain in that organ for a length of time, they become corroded by its juices.—M. Cuvier found in the stomach of an individual that died in the Paris Menagerie, nearly a pound weight of stones, bits of iron and copper, and pieces of money, worn down by constant attrition against each other, as well as by the action of the stomach itself. The human stomach, we may add, is equally capable of a similar exertion, although not so frequently called upon to put it to the test. Many of our readers will no doubt recollect the case of an American sailor, who died in one of the London hospitals in 1809, and who had swallowed, in the ten previous years, no fewer than thirty-five clasp-knives. Fragments of these, to the number of between thirty and forty, thirteen or fourteen of them being evidently blades, were found in his stomach after death. “Some of these,” says Dr. Marcet, in his account of the case, “were remarkably corroded and reduced in size, while others were comparatively in a tolerable state of preservation.” More than one instance of a similar description has since been put on record.

Although the Ostriches live together in large herds, the received opinion among naturalists is, that the males attach themselves to a single female. There is some difficulty in determining the number of eggs laid by the latter; some travellers estimating it as high as eighty, while others reduce it to ten. Of this latter opinion was Le Vaillant, whose authority is decidedly entitled to the highest respect on every subject connected with the habits of birds, which he studied in a state of nature with the scrutinizing eye of a philosopher, and the patient zeal of a scientific observer. He relates, however, a circumstance which once fell under his own observation, and which tends in some measure to reconcile these discordant statements, while at the same time it renders it questionable whether the Ostrich is not, occasionally at least, polygamous. Having disturbed

a female from a nest containing thirty-eight eggs of unequal size, and having thirteen others scattered around it, he concealed himself at a short distance, and observed, during the day, no less than four females successively taking part in the maternal office. Towards the close of the evening, a male also took his share of the duty ; and Le Vaillant remarks, that he has frequently had opportunities of verifying the fact, that the male bird sits as well as the female. In this case it would appear probable that several females had deposited their eggs in one common nest. The extraordinary number of eggs said to have been sometimes found, may also perhaps be accounted for by the fondness of the natives for these delicacies, which they abstract from the nest by means of a long stick, cautiously avoiding to introduce their hands, which, they affirm, would infallibly drive the bird to abandon the place. The Ostrich naturally continues laying, in order to complete her usual number : and in this way forty or fifty eggs may actually have been obtained from a single female.

Within the torrid zone the eggs are merely laid in the warm sand, the female sometimes sitting upon them during the night ; but, in general, the rays of the sun are sufficiently powerful to hatch them, without any assistance on her part. She does not, however, as has been commonly stated, neglect her offspring, but watches over them with as much solicitude as any other bird, hovering around the spot in which they are deposited, and, if surprised in her occupation, making a short circuit, and constantly returning to the object of her care. This doubling kind of flight is regarded by the hunters as a certain sign of the vicinity of her eggs, as at all other times the Ostriches pursue, for a time at least, a direct and straightforward course. In the more temperate regions, and especially in the neighborhood of the Cape, the Ostrich sits like other birds, always choosing the most retired and solitary places. Her nest consists merely of a pit of about three feet in diameter, dug in the

sand, which is thrown up around it, so as to form an elevated margin. At some little distance are usually placed, each in a separate cavity in the sand, a number of rejected eggs, which are said to be intended to serve as nutriment for the young brood, as soon as hatched ; a most remarkable instance of foresight, if truly stated, but not yet confirmed beyond the possibility of doubt.

The eggs are extremely hard, very weighty, and twenty or thirty times as large as those of our common hen. The color of the shells is a dirty white, tinged with light yellow. These are frequently formed into cups, and are used in various ways, as ornaments, by the natives of the countries in which they are found. The eggs themselves form, according to Thunberg, an article of considerable commerce at the Cape, where they are sold to the vessels that touch there, the thickness of their shells rendering them preferable for a sea voyage to those of any other bird. They are generally regarded as great luxuries ; but on this point there is some difference of opinion ; M. Sonnini affirming that, either from habit or from prejudice, he could not bring himself to consider them so good as the eggs to which he had been accustomed ; while M. Cuvier rapturously exclaims, that they are not merely to be regarded as delicacies, but are, in fact, "*ipsissimæ deliciæ*;" an expressive but untranslatable phrase, which we can only render in piebald English, the *ne plus ultra* of good eating. It is by no means improbable that, in the latter instance, the rarity of the dish conferred upon it a higher relish than its own intrinsic flavor would have warranted ; as was undoubtedly the case when the dissolute Roman emperor, in Rome's degenerate days, ordered the brains of six hundred Ostriches to be served up to his guests at a single supper.

The flesh of these birds was among the unclean meats forbidden to the Jews by the Mosaical law. It seems, however, to have been in especial favor with the Romans ; for we read of its being frequently introduced at their ta-

bles. We are even told by Nopsicus, that the pseudo-emperor, Firmus, equally celebrated for his feats at the anvil and at the trencher, devoured, in his own imperial person, an entire Ostrich at one sitting. It is to be hoped that the bird was not particularly old ; for it is allowed on all hands, at least in the present day, that when it has reached a certain age, it is both a tough and an unsavory morsel. The young are, nevertheless, said to be eatable; and we may well imagine that the haunch of such a bird would furnish a tolerably substantial dish. The Arabs, it may be added, have adopted the Jewish prohibition, and regard the Ostrich as an unclean animal: but some of the barbarous tribes of the interior of Africa, like the Struthiophagi of old, still feed upon its flesh whenever they are fortunate enough to procure it.

[illegible]



Opossum. Male & Female.

THE OPOSSUM.

PLATE XVIII.

Class—Mammalia. *Order V.*—Marsupiala: Pouched animals. *Genus*—Didelphis.

THIS is an animal of America, which is easily distinguished from all others, by two singular characters: the first is, that the female has under the belly a large cavity, where she receives and suckles her young; the second is, that the male and the female have no claws on the great toe of the hind feet, which are separated from the others, as the thumb in the hand of a man; whilst the toes are armed with crooked claws, as in the feet of other quadrupeds.

The Opossum is not found in the northern parts of America; but he does not constantly dwell in the hottest climates. He is found not only in Brazil, Guiana and Mexico, but also in Florida, Virginia, and other temperate regions of this continent. It produces often, and a great number of young at each time. Most authors say, four or five young; others, six or seven. Marcgrave affirms, that he has seen six young living in the bag of the female; they were about two inches in length; they were already very nimble; they went in and out of the bag many times in a day; they are still smaller when they are just brought forth. Some travellers say, that they are not larger than flies when they go out of the uterus into the bag, and stick to the paps: this fact is not so much exaggerated as some people may imagine; for young ones have been seen in an animal, whose species is like that of the Opossum, sticking to the paps, not larger than a bean.

The young Opossums stick to the paps of the mother

till they have acquired strength enough, and a sufficient growth to move easily. This fact is not doubtful, nor even particular in this species only. Some authors pretend, that they stick to the paps for several weeks : others say, that they remain in the bag only the first month. One may open with facility this bag, observe, count, and even feel the young, without disturbing them : they will not leave the pap, which they hold with their mouth, until they are strong enough to walk ; then they let themselves fall into the bag, and go out, and seek for their subsistence : they go in again to sleep, to suckle, and to hide themselves when they are terrified, when the mother flies, and carries in it the young.

From the mere inspection of the form of the feet of this animal, it is easy to judge that he walks awkwardly, and seldom runs : a man can overtake him without hastening his steps. He climbs up trees with great facility, hides himself in the leaves to catch birds, or hangs himself by the tail, the extremity of which is muscular and flexible, as the hand, so that he may squeeze, and even incurvate, all the bodies he seizes upon : he sometimes remains a long while in this situation, without motion : his body hangs with his head downward, when he silently waits for his prey : at other times, he balances himself to jump from one tree to another, like the monkeys, with like muscular and flexible tails, which he resembles also in the conformation of the feet. Though he is voracious and even greedy of blood, which he sucks with avidity, he feeds also upon reptiles, insects, sugar-canes, potatoes, roots, and even leaves and bark of trees. He may be fed as a domestic animal : he is neither wild nor ferocious : he is easily tamed, but he creates disgust by his bad smell, stronger and more offensive than that of the fox : his figure is also forbidding ; for, independently of his ears, which resemble those of an owl, of his tail, which resembles that of a serpent, and of his mouth, which is cleft to the very

eyes, his body appears always very dirty, because his hair is neither smooth nor curled, but tarnished, as if covered with dirt. The bad smell of this animal resides in the skin, for his flesh is eatable. The savages hunt this animal, and feed on his flesh heartily. It is so tenacious of life, that, in North Carolina, it has given rise to an adage, that, "if a cat has nine lives, an Opossum has nineteen."

The latest and fullest account of the manners and habits of the Opossum tribe, is given by Dr. Goodman, an American naturalist. "The Opossum," says he, "is very remarkable from other peculiarities, beside those which relate to the continuation of its kind. In the first place, it has a very large number of teeth (no less than fifty), and its hind feet are actually rendered hands, by short, fleshy, and opposable thumbs, which, together with the prominences in the palms of those posterior hands, enable the animal to take firm hold of objects which no one would think could be thus grasped. An Opossum can cling by these *feet* hands to a smooth silk handkerchief, or a silk dress, with great security, and climb up by the same. In like manner he can ascend by a skein of silk, or even a few threads. The slightest projection or doubling of any material, affords him a certain mean of climbing to any desired height. Another curious and amusing peculiarity, is his prehensile tail:—by simply curving this at the extremity, the Opossum sustains his weight, and depends from a limb of a tree, or other projecting body, and hanging in full security, gathers fruit, or seizes any prey within his reach: to regain his position on the limb, it is only necessary to make a little stronger effort with the tail, and throw his body upward at the same time.

"In speaking of the more obvious peculiarities of the Opossum, we may advert to the thinness and membranous character of the external ears, which may remind us in some degree of what has been heretofore said relative to the perfection of the sense of touch possessed by the bat,

in consequence of the delicacy of the extended integument forming the ears and wings. The extremity of the nose of our animal is also covered by a soft, moist, and delicate integument, which is, no doubt, very sensitive. On the sides of the nose, or rather on the upper lip, there are numerous long and strong divergent whiskers, or bristles, projecting to the distance of nearly three inches; over each eye there are two long black bristles, rather softer than the others, somewhat crisped, or undulated, and slightly decurved; while, on the posterior part of the cheek, and about an inch below and in front of the ear, there is a bunch of long, straight bristles (very similar to those of a hog), six or eight in number, projecting laterally, so as to form a right angle with the head. When the elongated conical form of the Opossum's head is recollected, together with its nocturnal habits, we cannot avoid remarking, that all these arrangements appear to have immediate reference to the safety of the animal, furnishing the means of directing its course, and warning it of the presence of bodies which otherwise might not be discovered until too late.

“ The mouth of the Opossum is very wide when open; yet the animal does not drink by lapping, but by suction. The wideness of the mouth is rendered very remarkable when the female is approached, while in company with her young. She then silently drops the lower jaw to the greatest distance it is capable of moving, retracts the angles of the lips, and shows the whole of her teeth, which thus present a formidable array. She then utters a muttering kind of snarl, but does not snap, until the hand, or other object, be brought very close. If this be a stick, or any hard or insensible body, she seldom closes her mouth on it after the first or second time, but maintains the same gaping and snarling appearance, even when it is thrust into her mouth. At the same time, the young, if they have attained any size, either exhibit their signs of defiance,

take refuge in the pouch of the mother, or, clinging to various parts of her body, hide their faces amidst her long hair.

“The general color of the Opossum is a whitish gray. From the top of the head along the back and upper part of the sides, the gray is darkest, and this color is produced by the intermixture of coarse white hairs, upwards of three inches long, with a shorter, closer, and softer hair, which is white at base, and black for about half an inch at tip. The whole fur is of a woolly softness, and the long white hairs diverging considerably, allow the back parts to be seen, so as to give the general gray color already mentioned. On the face the wool is short, and of a smoky white color; that on the belly is of the same character, but is longer on the fore and hind legs; the color is nearly black from the body to the digits, which are naked beneath. The tail is thick and black, for upwards of three inches at base, and is covered by small hexagonal scales, having short rigid hairs interspersed throughout its length, which are but slightly perceptible at a little distance. The Opossum is generally killed for the sake of its flesh and fat. Its wool is of considerable length and fineness during the winter season, and we should suppose that in manufactures it would be equal to the sheep's wool which is wrought into coarse hats.

“The Opossum is a nocturnal and timid animal, depending for his safety more on cunning than strength. His motions are slow, and his walk, when on the ground, entirely plantigrade, which gives an appearance of clumsiness to his movements. When on the branches of trees, he moves with much greater ease, and with perfect security from sudden gusts of wind: even were his weight sufficient to break the limb on which he rests, there is no danger of his falling to the earth, unless when on the lowest branch, as he can certainly catch, and securely cling to, the smallest intervening twigs either with the

hands or the extremity of the tail. This organ is always employed by the animal while on the smaller branches of trees, as if to guard against such an occurrence, and it is very useful in aiding the Opossum to collect his food, by enabling him to suspend himself from a branch above, while rifling a bird's-nest of its eggs, or gathering fruits.

"The food of the Opossum varies very much, according to circumstances. It preys upon birds, various small quadrupeds, eggs, and no doubt occasionally upon insects. The poultry yards are sometimes visited, and much havoc committed by the Opossums, as, like the weasel, this animal is fonder of cutting the throats and sucking the blood of a number of individuals, than of satisfying his hunger, by eating the flesh of one. Among the wild fruits, the persimmon (*Diospyros Virginiana*) is a great favorite; and it is generally after this fruit is in perfection that the Opossum is killed by the country people for the market. At that season it is very fat; and but little difference is to be perceived between this fat, and that of a young pig. The flavor of the flesh is compared to that of a roasting pig: we have in several instances seen it refused by dogs and cats, although the Opossum was in fine order, and but recently killed. This may have been owing to some accidental circumstance, but it was uniformly rejected by these animals, usually not very nice when raw flesh is offered.

"The hunting of the Opossum is a favorite sport with the country people, who frequently go out with their dogs at night, after the autumnal frosts have begun, and the persimmon fruit is in its most delicious state. The Opossum, as soon as he discovers the approach of his enemies, lies perfectly close to the branch, or places himself snugly in the angle where two limbs separate from each other. The dogs, however, soon announce the fact of his presence, by their baying; and the hunter, ascending the tree, discovers the branch upon which the animal is seated, and begins to shake it with great violence, to alarm, and cause

him to relax his hold. This is soon effected, and the Opossum, attempting to escape to another limb, is pursued immediately, and the shaking is renewed with greater violence, until at length the terrified quadruped allows himself to drop to the ground, where hunters or dogs are prepared to despatch him.

“Should the hunter, as frequently happens, be unaccompanied by dogs when the Opossum falls to the ground, it does not immediately make its escape, but steals slowly and quietly to a little distance, and then, gathering itself into as small a compass as possible, remains as still as if dead. Should there be any quantity of grass or underwood near the tree, this apparently simple artifice is frequently sufficient to secure the animal's escape, as it is difficult by moonlight, or in the shadow of the tree, to distinguish it; and if the hunter has not carefully observed the spot where it fell, his labor is often in vain. This circumstance, however, is generally attended to, and the Opossum derives but little benefit from his instinctive artifice.

“After remaining in this apparently lifeless condition for a considerable time, or so long as any noise indicative of danger can be heard, the Opossum slowly unfolds himself, and, creeping as closely as possible upon the ground, would fain sneak off unperceived. Upon a shout, or outcry, in any tone, from his persecutor, he immediately renews his death-like attitude and stillness. If then approached, moved, or handled, he is still seemingly dead, and might deceive any one not accustomed to his actions. This feigning is repeated as frequently as opportunity is allowed him of attempting to escape; and is known so well to the country folks, as to have long since passed into a proverb: ‘He is playing *’possum*,’ is applied with great readiness by them to any one who is thought to act deceitfully, or wishes to appear what he is not.

“The usual haunts of the Opossum are thick forests; and their dens are generally in hollows of decayed trees,

where they pass the day asleep, and sally forth, mostly after nightfall, to seek food. They are occasionally seen out during daylight, especially when they have young ones of considerable size, too large to be carried in the maternal pouch. The female then offers a very singular appearance, as she toils along with twelve or sixteen cubs, nearly of the size of rats, each with a turn of his tail around the root of the mother's, and clinging on her back and sides with paws, hands, and mouth. This circumstance was thought distinctive of another species, hence called *dorsigera*; but is equally true of the common or Virginian Opossum. It is exceedingly curious and interesting to see the young, when the mother is at rest, take refuge in the pouch, whence one or two of them may be seen peeping out, with an air of great comfort and satisfaction. The mother, in this condition, or at any time, in defence of her young, will make battle, biting with much keenness and severity, for which her long canine teeth are well suited.

“ If taken young, the Opossum is generally tamed, and becomes very fond of human society, in a great degree relinquishes its nocturnal habits, and grows troublesome from its familiarity. One has been thus tamed, which would follow the inmates of the house with great assiduity, and complain with a whining noise when left alone. As it grew older it became mischievous, from its restless curiosity, and there seemed to be no possibility of devising any contrivance effectually to secure it. The same circumstance is frequently remarked by persons who have attempted to detain them in captivity; and of the instances which have come to our knowledge, where even a great number were apparently well secured, they have all in a short time enlarged themselves, and been no more heard of. In some such instances these animals have escaped in the city, and for a long time have taken up their quarters in cellars, where their presence has never been suspected, as during the day they remained concealed.

THE MARMOSE, OR MURINE OPOSSUM,

Resembles in most respects the latter species ; they are natives of the same climate, in the same continent, and are very much alike by the form of the body, the conformation of the feet, and the tail, a part of which is covered with scales, the upper part only being hairy. But the Marmose is smaller than the common Opossum ; his snout is still sharper ; the female has no bag under the belly ; she has only two loose skins near the thighs, between which the young place themselves, to stick to the paps. When the young are brought forth, they are not so large as small beans : they then stick to the paps. The brood of the Marmose is very numerous : we have seen ten small Marmoses, each sticking to a pap, and the mother had still four more paps. It is probable that these animals bring forth a few days after the conception. The young are then foetuses only, which are not come to the fourth part of their growth.

THE CAYOPOLLIN, OR MEXICAN OPOSSUM,

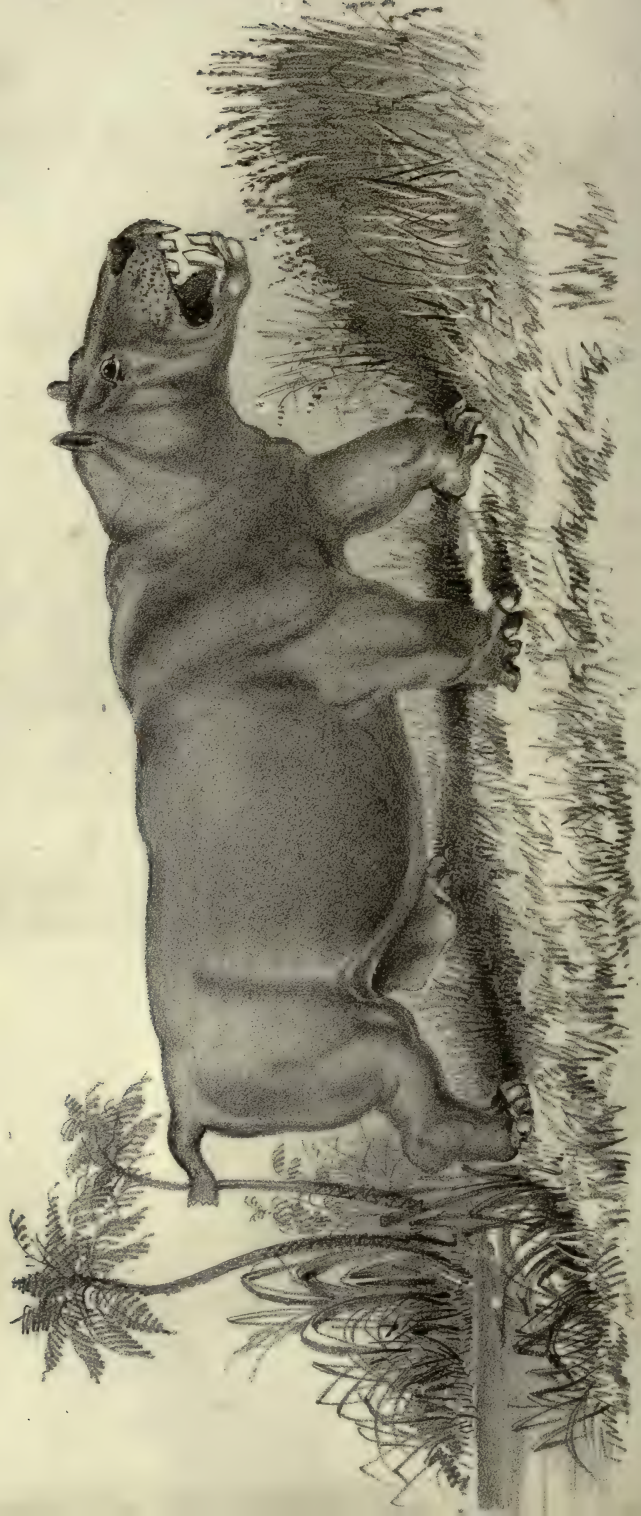
Says Fernandez, is a small animal, a little larger than a rat, very much resembling the Opossum in the snout, the ears, and the tail, which is thicker and stronger than that of a rat : he makes use of it as we do our hands : he has thin transparent ears ; the belly, the legs, and feet, white. The young, when they are frightened, embrace the mother, who lifts them up on the trees. This species has been found on the mountains of Mexico.

THE FLYING OPOSSUM.

This animal is found in New South Wales : its head is like a squirrel's, with ears large and erect, but the fur is more delicate, and of a beautiful dark glossy color, mixed

with gray; the under parts white; on each hip is a tan-colored spot. The sailing membrane resembles the flying squirrel's, but is broader in proportion: on the fore legs it has five toes, with a claw on each: on the hind ones, four toes, and a long thumb, which enables the animal to use it as a hand. It is remarkable, that the three out claws of the hind feet are not separated like the others.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 104



The Hypobotamus

THE HIPPOPOTAMUS.

PLATE XIX.

Class—Mammalia. *Order VIII.*—Pachydermata: Thick-skinned animals. *Genus*—Hippopotamus.

ALTHOUGH this animal has been celebrated from the earliest ages, it was, notwithstanding, but imperfectly known to the ancients. It was only towards the sixteenth century that we had some precise indications on the subject.

In comparing the descriptions which we have observed in different travellers, the Hippopotamus appears to be an animal whose body is longer and thicker than that of the rhinoceros: but his fore-legs are much shorter. His head is short, and thick in proportion to the body. He has no horns, neither on the nose, like the rhinoceros, nor on the head, like ruminating animals. His cry, when hurt, approaches as near to the neighing of the horse, as the bellowing of the buffalo; but his usual voice resembles the neighing of a horse; from which, however, he differs in every other respect; and this fact, we may presume, has been the sole reason for giving him the name of *Hippopotamus*, or *River Horse*; as the howling of the lynx, which resembles that of the wolf, has occasioned him to be called the *stag-like wolf*. The incisive teeth of the Hippopotamus, and especially the two canine teeth of the lower jaw, are very long, very strong, and of so hard a substance, that they strike fire with a piece of iron. This is probably what has given rise to the fable of the ancients, who have reported that the Hippopotamus vomited fire. These canine teeth of this animal are of white, so clear and so hard, that they are preferable to ivory for making artificial teeth. The incisive teeth of the Hippopotamus, especially

those of the lower jaw, are very long, cylindrical and furrowed. The canine teeth, which are also very long, are crooked, prismatic, and sharp, like the tusks of a boar. The molares are square, or rather longer on one side than the other, nearly like the grinders of a man, and so thick, that a single one weighs more than three pounds. The largest of the incisive, or the canine teeth, are twelve, and even sixteen inches in length, and sometimes weigh twelve or thirteen pounds each. The skin is in some parts two inches thick; and the Africans cut it into whip thongs, which, in consequence of their softness and pliability, they prefer to those procured from the rhinoceros hide.

The male Hippopotamus is about six feet nine inches long, from the extremity of the muzzle to the beginning of the tail; fifteen feet in circumference, and six feet and a half in height. His legs are about two feet ten inches long; the length of the head, three feet and a half, and eight feet and a half in circumference; and the width of the mouth, two feet four inches. It, however, sometimes acquires much greater magnitude. In the south of Africa, M. le Vaillant killed one which measured ten feet seven inches in length, and about nine feet in circumference.

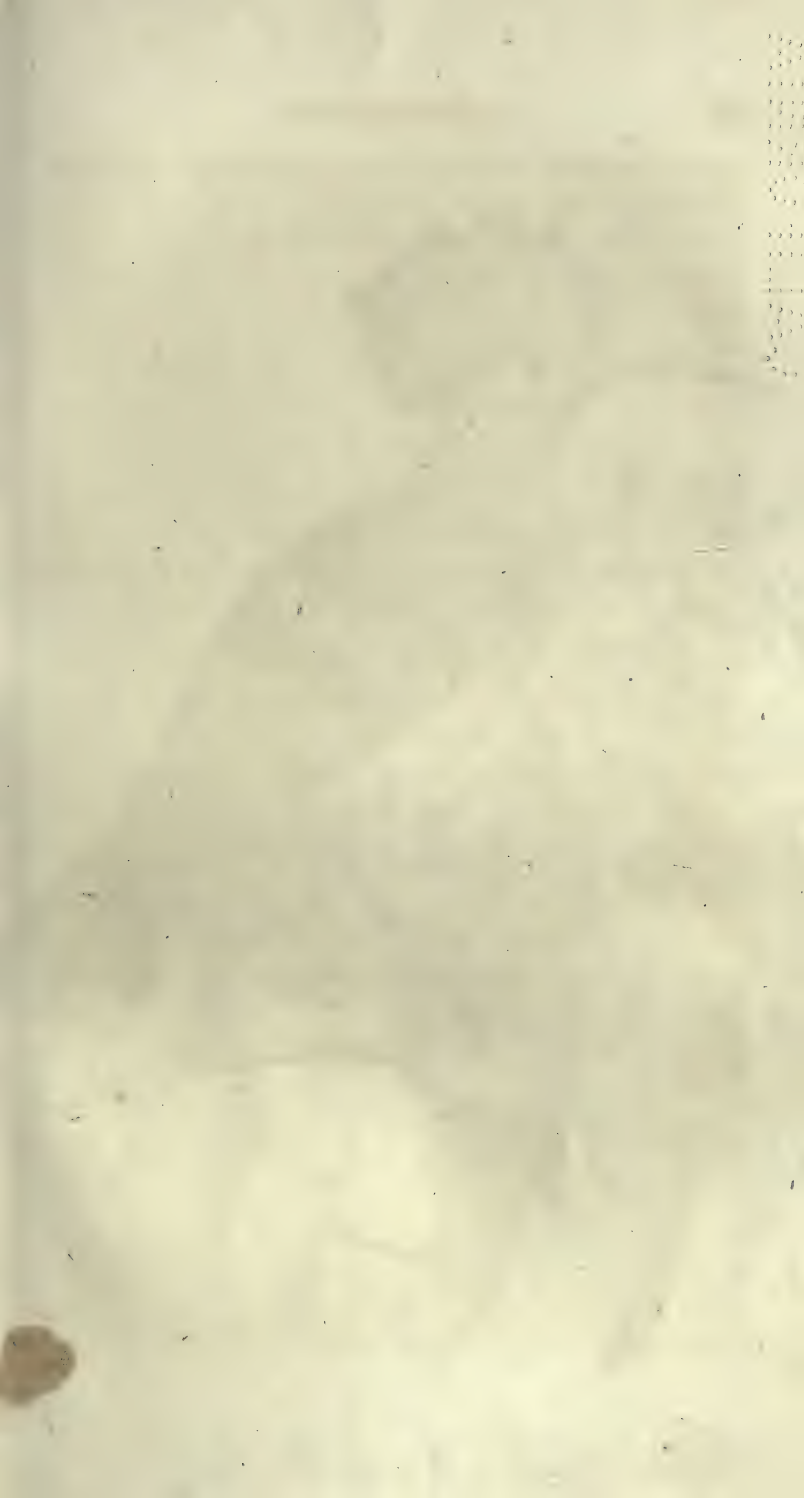
Thus powerfully armed, with a prodigious strength of body, he might render himself formidable to every animal; but he is naturally gentle, and appears never to be the aggressor, except when annoyed or wounded. It has been erroneously stated, that he commonly moves slowly on the land; but, on the contrary, when he has been injured, he has been known to pursue persons for several hours, who escaped with great difficulty. He swims quicker than he runs, pursues the fish, and makes them his prey. Three or four of them are often seen at the bottom of a river, near some cataract, forming a kind of a line, and seizing upon such fish as are forced down by the violence of the stream. He delights much in the water, and stays there as willingly as upon land: notwithstanding

which, he has no membranes between his toes, like the beaver and otter; and it is plain, that the great ease with which he swims, is only owing to the great capacity of his body, which only makes bulk for bulk, and is nearly of an equal weight with the water. Besides, he remains a long time under water, and walks at the bottom as well as he does in the open air. When he quits it to graze upon land, he eats sugarcanes, rushes, millet, rice, roots, &c., of which he consumes and destroys a great quantity, and does much injury to cultivated lands; but, as he is more timid upon earth than in the water, he is very easily driven away; and, as his legs are short, he cannot save himself well by flight, if he is far from any water. His resource, when he finds himself in danger, is to plunge himself into the water, and go a great distance before he reappears. He commonly retreats from his pursuers; but if he is wounded, he becomes irritated, and, immediately facing about with great fury, rushes against the boats, seizes them with his teeth, often tears pieces out of them, and sometimes sinks them under water. "I have seen," says a traveller, "a Hippopotamus open his mouth, fix one tooth on the side of a boat, and another on the second plank under the keel,—that is, four feet distant from each other,—pierce the side through and through, and in this manner sink the boat to the bottom. I have seen another, lying by the side of the seashore, upon which the waves had driven a shallop, heavily laden, which remained upon his back dry, and which was again washed back by another wave, without the animal appearing to have received the least injury. When the Negroes go-a-fishing in their canoes, and meet with a Hippopotamus, they throw fish to him; and then he passes on, without disturbing their fishery any more. He injures most when he can rest himself against the earth; but when he floats in the water he can only bite. Once, when our shallop was near shore, I saw one of them get underneath it, lift it above water upon his

back, and overset it with six men who were in it ; but, fortunately, they received no hurt."

"We dare not," says another traveller, "irritate the Hippopotamus in the water, since an adventure happened, which was near proving fatal to three men. They were going in a small canoe, to kill one in a river where there was about eight or ten feet water. After they had discovered him walking at the bottom, according to his custom, they wounded him with a long lance, which so greatly enraged him, that he rose immediately to the surface of the water, regarded them with a terrible look, opened his mouth, and at one bite took a great piece out of the side of the canoe, and had very nearly overturned it ; but he replunged, almost directly to the bottom of the water.

These animals are only numerous in some parts of the world : it even appears, that the species is confined to particular climates, and seldom to be met with but in the rivers of Africa. Dutch travellers say that they bear three or four young ones ! but this appears very suspicious, as the Hippopotamus is of an enormous bulk, he is in the class of the elephant, the rhinoceros, the whale, and all other great animals, who bring forth but one ; and this analogy appears more certain than all the testimonials that they have exhibited. The female brings forth her young upon land ; and the calf, at the instant when it comes into the world, will fly to the water for shelter if pursued ;—a circumstance which Thunburg notices as a remarkable instance of pure instinct.





Hoopoe Male, Female & Nest.

THE HOOPOE.

PLATE XX.

Class—Aves. Order II.—Passerinæ. Genus—Upupa.

This handsome bird, the Epops of the Ancient Greeks, under which name it figures as a principal character, in Aristophanes' play of "The Birds," *Upupa Gallo del Paradiso*, *Pubula*, *Bubola* and *Puppita* of the Italians, *Hupe*, *Huppe* and *Putput* of the French, *El Abubilla* of the Spaniards, *Upupa Epops* of Linnæus, is generally an annual though a rare visitant to the shores of America. We most probably owe their visits to their periodical migrations, when a few stragglers reach us. The bird is widely spread over Europe in the summer months, and is abundant in the South. Sweden is mentioned by some as its northern limit, where the country people are said to consider its appearance as ominous; and in Great Britain it was formerly looked upon by the same class as the harbinger of some calamity. Montague relates that it is plentiful in the Russian and Tartarian deserts; and Sonnini saw it on the banks of the Nile: Africa and Asia are supposed to be its winter quarters.

In a state of nature moist localities are the chosen haunts of the hoopoe. There it may be seen on the ground, busily searching with its long bill for its favorite insects, (chiefly coleopterous) which it often finds in the droppings of animals; and sometimes it may be observed hanging from the branches of trees, examining the under side of the leaves for those which there lie hid.

The hole of a decayed tree is the locality generally preferred for the nest, which is made of dried grass lined with feathers, wool or other soft materials, and is generally very fetid from the remains of the insects, &c., with which the

parent-birds have supplied their young. This offensive odor most probably gave rise to the story adopted by Aristotle, that the nest of the hoopoe was formed of the most disgusting materials. When a hollow tree is not to be found, the places selected are sometimes the fissures of rocks, and the crevices of old buildings. The eggs are generally four or five in number, of a grayish-white, spotted with deep gray or hair-brown.

Few birds are more entertaining in captivity : its beautiful plumage, droll gesticulations and familiar habits soon make it a favorite. When it perceives that it is observed it begins to tap with its bill against the ground, (which, as Bechstein observes, gives it the appearance of walking with a stick, (at the same time often shaking its wings and tail, and elevating its crest. This latter feat, which is performed very frequently, and especially when the bird is surprised or angry, is effected by a muscle situated on the upper part of the head for the purpose. Its note of anger or fear is harsh and grating, something like the noise made by a small saw when employed in sawing, or the note of a jay, but nothing like so loud. It gives utterance to a soft note of complacency occasionally, and is not without other intonations. The grating note is not always indicative of anger or fear, for the bird generally exerts it when it flies up, and settles on its perch.

The following extract from a letter written by M. Von Schauroth, given by Bechstein in his interesting little book on stove-birds or cage-birds, cannot fail to interest our readers :

"With great care and attention," writes M. Von Schauroth, "I was able last summer to rear two young hoopoes, taken from a nest which was placed at the top of an oak-tree. These little birds followed me every where, and when they heard me at a distance, showed their joy by a particular chirping, jumped into the air, or, as soon as I was seated, climbed on my clothes, particularly when

giving them food from a pan of milk, the cream of which they swallowed greedily ; they climbed higher and higher, till at last they perched on my shoulders, and sometimes on my head, caressing me very affectionately : notwithstanding this, I had only to speak a word to rid myself of their company ; they would then immediately retire to the stove. Generally they would observe my eyes to discover what my temper might be, that they might act accordingly. I fed them like the nightingales, or with the universal paste, to which I sometimes added insects ; they would never touch earth-worms, but were very fond of beetles and may-bugs ; these they first killed, and then beat them with their beak into a kind of oblong ball ; when this was done, they threw it into the air, that they might catch it and swallow it lengthways ; if it fell across the throat, they were obliged to begin again. Instead of bathing, they roll in the sand. I took them one day into a neighboring field, that they might catch insects for themselves, and had then an opportunity of remarking their innate fear of birds of prey, and their instinct under it. As soon as they perceived a raven, or even a pigeon, they were on their bellies in a twinkling of an eye, their wings stretched out by the side of their head, so that the large quill feathers touched ; they were thus surrounded by a sort of crown, formed by the feathers of the tail and wings, the head leaning on the back, with the beak pointing upwards ; in this curious posture they might be taken for an old rag. As soon as the bird which frightened them was gone, they jumped up immediately, uttering cries of joy. They were very fond of lying in the sun ; they showed their content by repeating in quivering tones, ‘ vec, vec, vec ;’ when angry, their notes are harsh, and the male, which is known by its color being redder, cries ‘ hoop, hoop.’ The female had the trick of dragging its food about the room, by this means it was covered with small feathers and other rubbish,

which by degrees formed into an indigestible ball in its stomach, about the size of a nut, of which it died. The male lived through the winter ; but not quitting the heated stove, its beak became so dry that the two parts separated, and remained more than an inch apart ; thus it died miserably."

Buffon gives an account of one which was taken in a net when full grown, and became very much attached to its mistress, to whom it would fly for protection. It had two very different tones ; one soft and inward, seeming, as Buffon says, to proceed from the very seat of sentiment,—this it addressed to its beloved mistress ; the other sharp and more piercing, which expressed anger and fear. It was not confined ; and though it had the full range of the house, and the windows were often open, it never showed the least desire to escape ; its love of liberty not being so strong as its attachment. It is painful to add that this amiable bird died of hunger.

The hoopoe was not without its uses in the old *Materia Medica*. Thus we read that its heart was good against pains in the side ; that the tongue suspended (round the neck, we suppose) helped a bad memory ; while a fumigation of the feathers was a vermifuge, and the skin cured the head-ache when placed on the ailing part.

Moreover, he who wished to dream astonishing dreams, had only to anoint his temples with hoopoe's blood, and the wonderful vision was sure to follow.

Jonston, who enumerates these *formulae*, adds with great gravity, that he disbelieves the assertion that the right wing of the bird and a tooth, suspended at the head of a sleeper, will keep him in slumber till it be removed.

The plumage of the bird is too well known to need description here. The female is similar to the male, with the exception that her tints are less bright. Those who have tasted the flesh describe it as very unpalatable. A

specimen was bought lately at Vienna, and brought to England. The bird, soon after it was purchased, became tame, and was remarkably bold, not showing the least fear of a favorite dog, when allowed to come out of his cage. But the severe weather killed it, notwithstanding the great care taken to protect it from cold.

FOSSIL ANIMALS.

By the researches of geologists, we are not only made acquainted with the probable process by which the earth's surface has arrived at its present condition, but they also unfold to us the astonishing fact that whole races of vegetables, as well as animals, once existed on this earth, which are now extinct.

A gigantic skeleton of an immense animal has been found in the earth near Buenos Ayres: it is nearly as large as the elephant, its body being nine feet long and seven feet high. Its feet were enormous, being a yard in length, and more than twelve inches wide. They were terminated by gigantic claws; while its huge tail, which probably served as a means of defence, was larger than that of any other beast, living or extinct.

The form of its teeth proved that this large animal must have lived upon vegetables; and its claws were probably used for digging up the roots on which it is supposed to have fed.

This animal has been called the *Megatherium*: *mega*, (great,) *therion*, (wild beast.) It was of the sloth species, and seems to have had a very thick skin, like that of the armadillo, set on in plates, resembling a coat of armor. There are no such animals in existence now: they belong to a former state of this earth.

There are also many other fossil animals belonging to the ancient earth. One of them is called the *Ichthyosaurus*, or fish lizard. It had the teeth of a crocodile, the head of a lizard, and the fins or paddles of a whale. These fins, or paddles, were very curious, and consisted of above a hundred small bones, closely united together. This animal used to live principally at the bottoms of rivers, and devour amazing quantities of fish, and other water animals, and

sometimes its own species; for an ichthyosaurus has been dug out of the cliffs at Lyme Regis, England, with part of a small one in his stomach. This creature was sometimes thirty or forty feet long.

Another of these fossil animals is called the *Plesiosaurus*, a word which means, *like a lizard*. It appears to have formed an intermediate link between the crocodile and the ichthyosaurus. It is remarkable for the great length of its neck, which must have been longer than that of any living animal.

There was another curious animal called the *Pterodactyle*, with gigantic wings. The skull of this animal must have been very large in proportion to the size of the skeleton, the jaws themselves being almost as large as its body. They were furnished with sharp hooked teeth. The orbits of the eyes were very large: hence, it is probable that it was a nocturnal animal, like the bat, which, at first sight, it very much resembles in the wings, and other particulars.

The word pterodactyle signifies wing-fingered; for it had a hand of three fingers at the bend of each of its wings, by which, probably, it hung to the branches of trees. Its food seems to have been large dragon-flies, beetles, and other insects, the remains of some of which have been found close to the skeleton of the animal. The largest of the pterodactyles were of the size of a raven.

The bones of the creatures we have been describing, were all found in England, France, and Germany, except those of the megatherium, which was found in South America. In the United States, the bones of an animal, twice as big as the elephant, called the *Mastodon*, or *Mammoth*, have been dug up in various places; and a nearly perfect skeleton is to be seen at Peale's museum, in Philadelphia.

Now it must be remembered that the bones we have been speaking of, are found deeply imbedded in the earth,

and that no animals of the kind now exist in any part of the world. Beside those we have mentioned, there were many others, as tortoises, elephants, tigers, bears, and rhinoceroses, but of different kinds from those which now exist.

It appears that there were elephants of many sizes, and some of them had woolly hair. The skeleton of one of the larger kinds was found in Siberia, some years since, partly imbedded in ice, where it had doubtless been preserved for thousands of years. It was covered with flesh when first seen. After two years, the ice thawed away, and the whole skeleton fell to the ground from the elevated position in which it was found. It was then taken to St. Petersburg, where it is now to be seen in the Cabinet of Natural History. Although the skin of this creature was nearly gone when the bones were taken, still about thirty pounds of hair were obtained from it.

But we have not yet mentioned the greatest wonder of fossil animals: this is the *Iguanodon*, whose bones have been found in England. It was a sort of lizard, and its thigh bones were eight inches in diameter. This creature must have been from seventy to a hundred feet long, and one of its thighs must have been as large as the body of an ox.

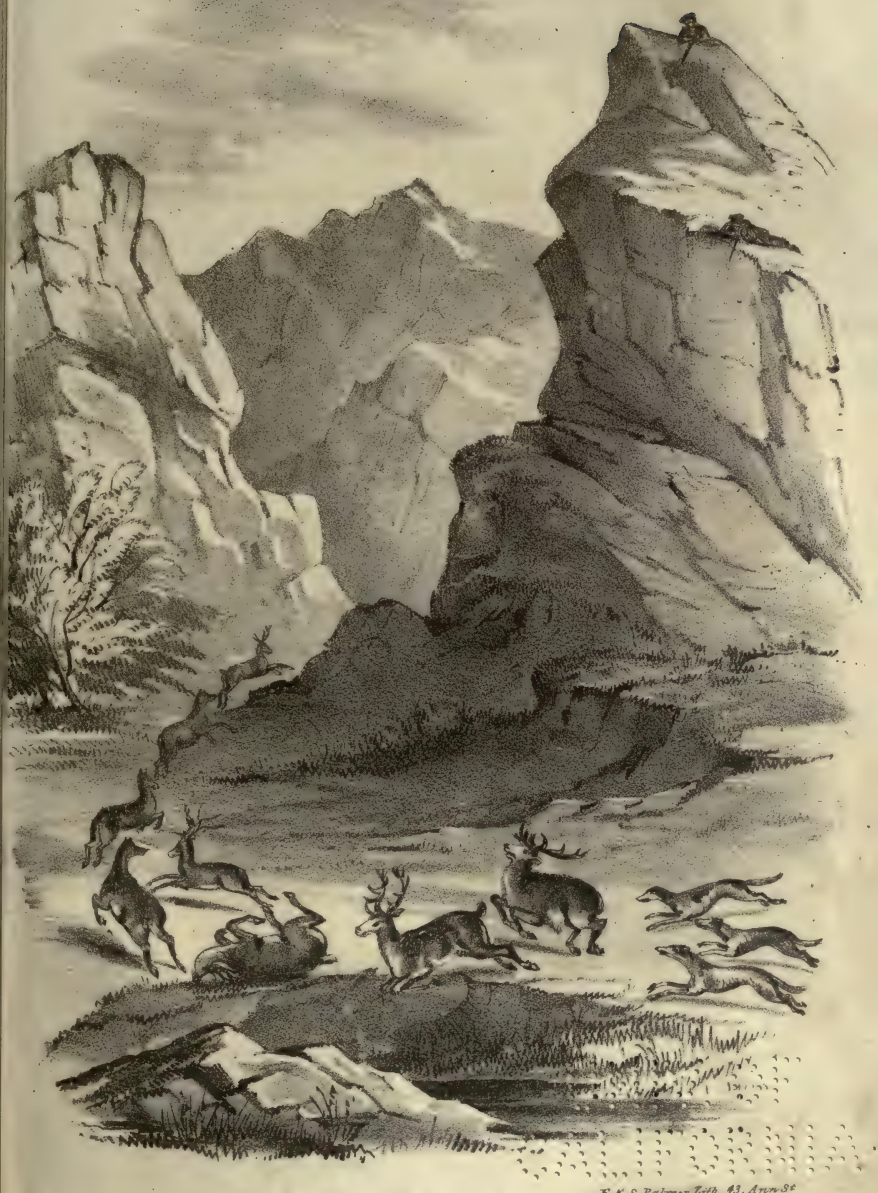
The subject of which we are treating increases in interest as we pursue it. Not only does it appear, that, long before man was created, and before the present order of things existed on the earth, strange animals, now unknown, inhabited it, but that they were exceedingly numerous. In certain caves in England, immense quantities of the bones of hyenas, bears, and foxes are found; and the same is the fact in relation to certain caves in Germany.



No. 22.



Deer Hunting in the Highlands.



F. & S. Palmer, Lith. 43, Arden St.

Deer Stalking.

70 XINJI
445071100

DEER-STALKING IN THE HIGHLANDS.

(*For a Description of the Deer, see Volume I., page 327.*)

OF this most exciting of all British sports, we have here a scarcely less exciting account, by one who has evidently enjoyed it with all his heart and soul. He luxuriates in the mere remembrance with the gusto of a true lover, whilst his eloquence aims at no higher object than to enable others to participate in his gratifications. Of any of those sports which involve pain or anguish to the animal creation, we profess to be no admirers; but in this there is so much mental skill and physical fortitude required, the scene is so full of inspiring and elevating influences, with its crags, mountains, and precipices, its cataracts, and its burns, its storms, its mists, and its "golden exhalations of the dawn;" there is, in short, so riotous a sense of life, such a delicious feeling of enjoyment obtained in the pursuit, that we in "populous cities pent" cannot at least but unfeignedly envy the deer-stalker the happiness of a day in the Highlands. We proceed to give a specimen of the sport.

It is just day-break; the stalker leaps from his bed, takes a single glance at the sky, to see the course of the wind, and hurries on his apparel. Breakfast awaits him—a Scotch breakfast,—fit preparative for the exertions of the day. Tea and coffee, venison pastry, mutton chops and broiled grouse, eggs, rolls, dry toast, and household bread are set forth in sufficient profusion to satisfy the sharpest as well as the most epicurean appetites. Breakfast over, he is prepared for a start. His attendants, one holding a couple of hounds in a leash tugging with impatience to be off, are quite ready, and they all move on at a good pace through the light falling mist. Ben Daig (or the red hill,) is their immediate object. They ascend its rugged sides with the firm steps of men accustomed to the toil, until they reach the point immediately under the huge mass of granite which forms the summit of the mountain, and where

all around are the bones of young fawns, lambs, and moor-fowl, the prey of the fox, the wild cat, and the eagle. A little higher, and they are on the top of Ben Daigr, looking down as upon a new world. Here everything bears the original impress of nature, untouched by the hand of man since its creation. The vast moor spread out below, the mass of huge mountains heaving up their crests around, the peaks in the distance, faint almost as the sky itself, give the appearance of an extent boundless and sublime as the ocean. Through all this desolate region there is nothing that can remind you of domestic life; you shall hear no sound but the rushing of the torrent, or the notes of the wild animals, the natural inhabitants; you shall see only the moor-fowl and the plover flying before you from hillock to hillock, or the eagle soaring aloft with his eyes to the sun or his wings wet with mist. The stalker now lays down his rifle on the heather, creeps forward on his hands and knees to a spot where he may have the best view of the glens below, steadily poises his telescope, and takes a minute survey. Disappointed, he is about to turn away and shift his position, when a something attracts his attention in the bog, by the burn under an opposite mountain. "It is, yes, it is a hart! a fine, noble fellow, with a magnificent pair of antlers, as he shows us by that toss of his head." With a rapid yet accurate glance the landmarks all round the spot where the hart lies are noted, one of the party is left to watch his movements, whilst the others endeavor by a circuitous route to get within shot. They descend the hill easily enough, but now must advance on their hands and knees over the surface of the black bog; now they must descend into the rocky burn, following its continual windings, until they reach a piece of green sward, open to the view of the watchful hinds, who are scattered on the surface of the hill above the devoted hart. What is now to be done? A still more circuitous path is sought in vain. "Raise not a foot nor a hand," commands the leader; "let not a hair of your head be seen; imitate my motions precisely." He lies down upon his breast, and worms himself along, half stifled, concealed only by a

small ridge, that barely covers him and his followers, who with great precision execute the same manœuvre. Again they are stopped; the burn crosses their route, and a deep-looking stream of water glides along its channel. There is no help for it; they descend silently into the pool (not daring the while to lift their heads above the ground), the guns are carefully handed from one to another as they stand immersed breast-high, and thus they again reach the sward, and, to the stalker's delight, behold one of the marks previously noted in the neighborhood of the deer. Is he still there? The stalker raises his head slowly, inch by inch; the horns are just visible over the line of the ground. Subduing his delight, he feels his rifle, makes a slight noise, the deer is seen to spring, and the crack of the gun is heard at the same moment—the hart is gone! but not unhurt; the ball is in him, and the dogs are after him. Away they go over moss and rock, steep and level, in and out of the black mire, unto the foot of a hill, which they ascend with a slackened pace. Up the nearest eminence runs one of the hunters, and with levelled glass endeavors to watch their course. The deer-stalker at his topmost speed follows the chase, listening anxiously as he runs for the bark of the dogs, significant of their having brought the stag to bay. The wished-for voices soon break upon him, he redoubles his speed, and a sudden opening being entered, there is the magnificent creature, standing on a narrow projecting ledge of rock within the cleft, in the middle course of the mountain cataract, the rocks closed in upon his flanks, bidding defiance in his own mountain-hold! On the very edge of the precipice the dogs are baying at him furiously; one rush of the stag will send them down the chasm into eternity, yet in their fury they seem wholly unconscious of the danger. Delay would now be fatal: the stalker creeps cautiously round to the nearest commanding spot; every moment is precious, yet the least carelessness on his part that should reveal his presence to the deer, would cause the latter to break bay, and in all probability precipitate the fate of the dogs. Meantime the stag, maddened by their vexatious attacks,

makes a desperate stab at one of them, which the dog endeavoring to avoid, retreats backward, loses his footing, his hind legs slip over the precipice—he is lost! No, he struggles courageously, his fore feet holding on by the little roughnesses of the bed of the torrent. He rises a little, but slips back again; he gasps painfully, but summons up all his strength and resolution for one last effort; hurra! the gallant dog has recovered his footing, and, not even taking breathing time, rushes at the hart as rash and wrathful as ever! The stalker is now ready on a mount overlooking the scene; he levels, but a sudden movement brings the dogs within the scope of the gun. Three times is the aim taken and abandoned; a fourth—crack! the ball is in the deer's head; he drops heavily into the splashing waters.

Deer, except in embarrassed situations, always run up the wind, their scent thus giving them warning of any concealed enemies in front, and their speed ensuring them against danger from the rear. They prefer lying in the open crevices, where the swells of wind come up occasionally from all quarters. There is no animal more shy or solitary by nature than the red deer. He takes the note of alarm from every living thing on the moor—all seem to be his sentinels. He is always most timid when he does not see his adversary, for then he suspects an ambush. If, on the contrary, he has him full in view, he is as cool and circumspect as possible; he then watches him most acutely, endeavors to discover his intention, and takes the best method possible to defeat it. From all this it may be gathered that the qualifications of a deer-stalker are really of a high order. In Mr. Scrope's enumeration of them, there is much simple truth beneath the facetious exaggeration. "Your consummate deer-stalker," he says, should not only be able to run like an antelope, and breathe like the trade winds, but to run in a stooping position, at a greyhound pace, with his back parallel to the ground, and his face within an inch of it, for a mile together. He should take a singular pleasure in threading the seams of a bog, or in gliding down a burn like an eel. Strong and pliant in the

an cle he should indubitably be ; since in running swiftly down precipices, picturesquely adorned with sharp-edged, angular, vindictive stones, his feet will get into awkward cavities ; if his legs are devoid of the faculty of breaking, so much the better. He should rejoice in wading through torrents, and be able to stand firmly on water-worn stones, unconscious of the current ; or if the waves be too powerful for him, when he loses his balance, and goes floating away on his back, (for if he has any tact or sense of the picturesque, he will fall backwards,) he should raise his rifle aloft in the air, lest his powder get wet. As for sleep, he should be a stranger to it ; and if a man gets into the slothful habit of lying in bed for five or six hours at a time, I should be glad to know what he is fit for ? Steady—very steady—his hand should be, and at times wholly without a pulse. Hyacinthine curls are a very graceful ornament to the head, but I leave it to a deer-stalker's own good sense, whether it would not be infinitely better for him to shave his crown at once, than to risk the loss of a single shot during the season. As to mental endowments, he should have the qualifications of a Ulysses and a Philidor combined. Wary and circumspect, never going rashly to work, but surveying all his ground like an experienced general before he commences operations, patience under suspense and disappointment, fertile in conception, and rapid and decisive in execution. He must be brave to attempt—he must have fortitude to suffer. What more can be required for the greatest undertakings ?”

The forest of Atholl, the scene of the operations so graphically described by Mr. Scrope, is one of the most famous of the deer forests, and consists of a tract of wild but romantic country, extending nearly forty miles in length, and in some parts eighteen in breadth. It contains 135,451 acres ; of which 51,708 are reserved exclusively (with a slight exception, as to Glen Tilt, where sheep are occasionally pastured) for deer-stalking. The highest mountains in the hunting district are Ben-y-Gloe and Ben Daigr. Of the immense size of the former, some idea may be formed from the statement of its dimensions. The highest point, Cairn-na-Gour (or the goats' hill) is 3725

feet above the level of the sea, and the circumference of the base is estimated at twenty-five Scotch miles. It contains twenty-four corries, so wide apart, that a gun fired in one cannot be heard in the next. In fact, it overlooks a vast territory of mountains little inferior to itself, of glens, rivers, and lakes. Ben Daig, or the red mountain, so called from the red blocks of granite that form its summit, is 3550 feet in height.

The character and habits of this graceful and beautiful animal, the deer, we must not pass unnoticed. Of its graceful motion, its stately carriage, and its picturesque appearance, we need not speak, as there are few who have not had opportunities of seeing those qualities, though certainly in an inferior degree, in the deer of our own English parks. But its courage, its self-possession in danger, and its skill in so frequently outmanœuvring the enemy from whom danger is apprehended, are traits less known, because only developed when the animal breathes freely the air of its native mountains. We have before alluded to the deer's sagacity in running *up* the wind when pursued by the deer-stalker; a still more remarkable circumstance is mentioned by Mr. Scrope, "that in Devonshire, when hunted by dogs who are guided by the scent, they reverse their usual custom, and run *down* the wind! Something more than unreasoning instinct must be present here. Like many other animals, deer foresee changes of weather; "sometimes," says Mr. Scrope, "even two days before the change takes place." At the approach of a storm they descend from the exposed hill tops into the shelter of the valleys: when a thaw is about to begin, they leave the lower grounds for the mountains. They are excellent swimmers, and will cross from one island to another in search of food, or of the hinds, and it is asserted that on such occasions the rear animal puts his head on the hinder part of the one preceding, he does the same to the one preceding him, and so on with all the corps.

When the rutting season comes, the harts are heard loudly roaring defiance to each other throughout the forests. Each endeavors to collect a number of hinds as his own, and should he be disturbed by the approach of an intruder, a terrible bat-

tle begins, and continues till one, feeling himself beaten, retreats: but still unable to make up his mind to retreat with dignity, begins cowering round the hinds, followed by his conqueror, until a touch of the latter's horn sends him at once scampering off, or he bounds aside and recommences the fight. Harts have been known to kill each other in these encounters. A pair were found in one of the duke of Gordon's deer forests with their horns inextricably locked, one dead and the survivor captive, soon to share the fate of his victim. The horns thus involved are still preserved. This period of excitement lasts only a few days, during which the hart is a dangerous enemy, even to man, if approached too nigh. The alarming attack made on Mr. and Mrs. Maule will be doubtless in the recollection of our readers. While they were crossing a park in their carriage, a stag rushed so furiously on the horses, that one of them died shortly after, and their own lives were put in considerable jeopardy. About this time the coat of the hart becomes of a lighter cast, his neck swells, and his body is drawn up like a greyhound's. The repeated conflicts and continual anxieties of the rutting season leave him very weak. His flesh is now rank and unfit for food. The hind drops but one fawn at a time, generally in the high heather, where she makes it lie down by pressing it with her nose. She then leaves it until night, but does not go so far from it as to endanger its safety. Keeping to windward, she is soon aware of the approach of the wild cat or any noxious vermin. It is said that if you take up a young fawn that has never followed its mother, rub its back and put your fingers in its mouth and it will follow you. The females are easily domesticated; not so the males.

Harts shed their horns annually, a truly wonderful circumstance if we consider that the horn is an actual continuation of the bone of the table of the skull, as the velvet or skin is of the integuments of the head! Nor is the rapidity with which this firm mass of bone is secreted less worthy of our admiration. After the old horns are shed, the new appear in ten days, and attain their full growth (immense as that often is,)

in three months. The age of the hart may be told from an examination of its horns until it has passed its sixth year. A magnificent pair of horns is said to be still preserved, containing each thirty-three antlers that belonged to a stag killed by the first king of Prussia. As the process of shedding seldom comes under observation, even of the foresters, we quote from Mr. Scrope the following notice of one such instance. Whilst the hart was "browsing, one of his antlers was seen to incline leisurely to one side, and immediately to fall to the ground : the stag tossed up his head as if in surprise, and began to shake it pretty violently, when the remaining antler was discarded also, and fell some distance from him. Relieved from this weight, he expressed his sense of buoyancy by bounding high from the ground, as if in sport, and then tossing his bare head, dashed away in a confused and rapid manner." "It is a remarkable fact," Mr. Scrope observes, "that few of the horns thus cast are found." The hinds have been seen to eat them, but it is scarcely conceivable that all the horns shed every year can be thus disposed of. The velvet before mentioned is a thick leaden-colored skin, covering the new horns : when this begins to peel off, the hart is in good condition for the table and for the hunt. Such deer as have three points at the upper extremity of their horns, are called royal, and were, we presume, the individuals chosen in former days for the king's sport. It was not uncommon in cases where the hart had, in sportsman's phrase, showed unusually good sport, and at last escaped, for the king to proclaim him ; after which no one was to injure or molest him, under severe penalties. There is an extraordinary connexion observable between the general health of the hart and the horns. A wound on the side of the body, will materially affect the corresponding horn, and any disturbance of the system, as from a voyage, will interfere with the horns for the time.



Oran - Outangs

MONKEYS.

PLATE XXIII.

Class—Mammalia. *Order II.*—Quadrumanæ; having four hands. *Family I.*—Apes. *Latin Name*—Pithecus.

THE Monkey tribe is very numerous, and is usually classed by naturalists in three divisions. Those which have no tails are termed *Apes*, and those which have short tails are denominated *Baboons*; but by far the most numerous division consists of those which have long tails, and which are known by the general name of *Monkeys*.

THE ORAN-OTANG, OR THE PONGO AND THE JOCKO.

Oran-otang is the name this animal bears in the East Indies; *Pongo*, its denomination at Loando, a province of Congo; and Kukurlacks in some parts of the East Indies. We shall present the Oran-otang and the Jocko together, because they are, possibly, but one and the same species. We have seen the small Oran-otang, or the Jocko, alive, and we have preserved its skin, but we can only speak of the Pongo, or great Oran-otang, from the accounts travellers have given us of it. Battel assures us, "that, excepting his size, the Pongo is exactly like that of a man in all his proportions: he is as tall (he says) as a giant; his face is like that of a man, the eyes deep sunk in the head, the hair on each side extremely long, the visage naked and without hair, as are also the ears and the hands; the body is lightly covered and scarcely differing from that of a man, except that there are no calves to the legs. Still, however, the animal is seen to walk on his hinder legs: he sleeps under trees, and builds himself a hut, which serves to protect him against the sun, and the rains of the tropical climates of which he is a native: he lives only upon fruits, and is not carnivorous; he cannot speak, although

furnished with greater instinct than any other animal of the brute creation. When the Negroes make a fire in the woods, this animal comes near and warms himself by the blaze: he has not, however, skill enough to keep the flame alive by feeding it with fuel. They go together in companies, and if they happen to meet with one of the human species, remote from succor, they show him no mercy. They even attack the elephant, which they beat with their clubs, and oblige to leave that part of the forest which they claim as their own. It is impossible to take any of these creatures alive, they are so strong. None of this kind, therefore, are taken, except when very young, and then but rarely, when the female happens to leave them behind; for, in general, they cling to the breast, and adhere both with legs and arms. There are two kinds of this animal, both very much resembling the human race—the Pongo, which is taller and thicker than a man; and the Jocko, whose size is much smaller,” &c. “The Apes of Guinea (says Bosman), which are called *Smitten* by the Flemings, are of a brown color, and grown to a very large size. I have seen some above five feet tall: these Apes are of a very disagreeable appearance, as well as those of another kind, which resemble them in every particular, excepting in size, which is a fourth part less than that of the former: they are very easily taught to do almost whatever their masters please.” Schouten says, “that the animals which the Indians call Oran-otangs, are almost all of the same height and shape as mankind, but that their back and loins are covered with hair, of which, however, there is a deficiency in the fore part of the body; that the females have two breasts; that the face is rough, the nose flat, and the ears like those of a man; that they are robust, active, bold, and defend themselves even against armed men; that they are passionately fond of women, and that there is no safety for them in passing through the woods they inhabit, as these animals immediately attack and injure them.” To these testimonies we may add that of M. de la Bresse, mentioned in his Voyage to Angola. This traveller assures us, “that the Oran-otangs, which he calls *Quimpeazes*, often attempt to

surprise the female negroes, which they keep with them for the pleasure of their company, feeding them very plentifully all the time. I knew (says he) a woman of Loando that had lived among these animals for three years. They grow from six to seven feet high, and are of unequalled strength. They build sheds, and make use of clubs for their defence: their faces are broad, their noses flat, their ears without a tip; their skins are fairer than that of a Mulatto, but they are covered on many parts of their body with long and tawny colored hair: their belly is extremely large, their heels flat, and yet rising behind about half an inch: they sometimes walk upright, and sometimes upon all fours when they are fantastically disposed. We purchased two of these animals, one about fourteen months old, which was a male, and a female about twelve months."

The Oran-otang which I saw, walked always upright, even when it carried heavy burdens. Its air was melancholy, its deportment grave, its nature more gentle and very different from that of other apes. Unlike the baboon, or the monkey, whose motions are violent, and appetites capricious, who are fond of mischief, and only obedient through fear, a look was sufficient to keep it in awe. I have seen it give its hand to show the company to the door, that came to see it, and it would walk about gravely with them, as if one of the society. I have seen it sit at table, unfold its napkin, wipe its lips, make use of the spoon and the fork to carry the victuals to its mouth, pour out its drink into a glass, touch glasses when invited, take a cup and saucer and lay them on the table, put in sugar, pour out its tea, leave it to cool before drinking—all this without any other instigation than the signs or the command of its master, and often of its own accord. It was gentle and inoffensive; it even approached strangers with respect, and came rather to receive caresses than to offer injuries: it ate almost of every thing that was offered to it, but it preferred dry and ripe fruits to all other aliments. It would drink wine, but in small quantities, and willingly left it for milk, or any other sweet liquor. Mr. L. Brosse, who bought two young ones that were but a

year old, from a negro, relates that "even at that age, they sat at table, ate of every thing without distinction, made use of their knife, spoon and fork, both to eat their meat and help themselves: they drank wine and other liquors. We carried them on shipboard, and when they were at table, they made signs to the cabin boys, expressive of their wants; and whenever they neglected attending upon them as they desired, they instantly flew into a passion, seized them by the arm, bit them, and kept them down. The male was sea-sick, and required attendance like a human creature: he was even twice bled in the right arm; and every time afterwards, when he found himself indisposed, he showed his arm, as desirous of being relieved by bleeding."

Henry Grose relates, "that these animals are met with to the north of Coramandel; that Mr. Horne, governor of Bombay, had two of them sent him, a male and a female: they were scarcely two feet high, but their form was entirely like the human: they walked erect upon their two feet, and were of a pale color, without any hairs on any other part than where mankind generally have them: their actions perfectly resembled the human, and their melancholy plainly evinced how strongly they felt the weight of their captivity: they made their bed very carefully in the cage in which they were sent on board the ship. When any person looked at them, they hid those parts with their hands, which modesty forbids the sight of. The female (adds he) died on board, and the male showed all real signs of grief, and took the death of his companion so greatly to heart, that he refused his food, and did not survive her more than two days."

Francis Pyrrard relates, "that in the province of Sierra Leone, in Africa, there are a kind of apes called *Barris*, which are strong and muscular, and so very industrious, that, if properly fed and instructed while young, they serve as very useful domestics. They usually walk upright, will pound at the mortar, fetch water from the river in a little pitcher, which they carry on their heads; but, if care be not taken to receive the pitcher at their return, they let it fall to the ground, and

then, seeing it broken, they begin to lament and cry for the loss.

The Jocko is known by the name of the Chimpanzee. It is the *Simia Troglodytes* of Linnæus. From the Oran it differs only in color and stature; the former being dark brown or blackish, and the latter not exceeding two feet and a half or three feet. It is a native of Angola, Sierra Leone, and some parts of Asia.

Mr. McLeod gives the following description of an Oranotang which was brought to England, from Borneo, in 1816, on board the *Alceste*, when the embassy was returning from its fruitless mission to China:—"The Oran-otang, also a native of Borneo (says he), is an animal remarkable not only from being extremely rare, but as possessing, in many respects, a strong resemblance to man. What is technically denominated the cranium, is perfectly human in its appearance; the shape of the upper part of the head, the forehead, the eyes (which are dark and full), the eyelashes, and, indeed, every thing relating to the eyes and ears, differing in no respect from man. The hair of his head, however, is merely the same which covers his body generally. The nose is very flat, the distance between it and the mouth considerable; the chin, and, in fact, the whole of the lower jaw, is very large, and his teeth, twenty-six in number, are strong. The lower part of his face is what may be termed an ugly or caricature likeness of the human countenance. The position of the scapulæ, or shoulder-blades, the general form of the shoulders and breasts, as well as the figure of the arms, the elbow joint especially, and the hands, strongly continue the resemblance. The metacarpal, or that part of the hand immediately above the fingers, is somewhat elongated; and, by the thumb being thrown a little higher up, nature seems to have adapted the hand to his mode of life, and given him the power of grasping more effectually the branches of trees.

"He is corpulent about the abdomen, or, in common phrase, rather pot-bellied, looking like one of those figures of Bacchus, often seen riding on casks: but whether this is his natural

appearance when wild, or acquired since his introduction into new society, and by indulging in a high style of living, it is difficult to determine.

“His thighs and legs are short and bandy, the ancle and heel like the human ; but the fore part of the foot is composed of toes, as long and as pliable as his fingers, with a thumb a little situated before the inner ancle ; this conformation enabling him to hold equally fast with his feet as with his hands. When he stands erect, he is about three feet high, and he can walk when led like a child ; but his natural locomotion, when on a plain surface, is supporting himself along, at every step, by placing the knuckles of his hands upon the ground. All the fingers, both of the hands and feet, have nails exactly like the human race, except the thumb of the foot, which is without any.

“His natural food would appear to be all kinds of fruits and nuts, but he eats biscuit, or any other kind of bread, and sometimes animal food. He will drink grog, or even spirits, if given to him ; and has been known repeatedly to help himself in this way : he was also taught to sip his tea or coffee, and, since his arrival in England, has discovered a taste for a pot of porter. His usual conduct is not mischievous and chattering, like that of monkeys in general ; but he has rather a grave and sedate character, and is much inclined to be social, and on good terms with every body. He made no difficulty, however, when cold, or inclined to sleep, in supplying himself with any jacket he found hanging about, or in stealing a pillow from a hammock, in order to be more soft and comfortable.

“Sometimes, when teased by showing him something to eat, he would display in a very strong manner the human passions, following the person, whining and crying, throwing himself off on his back, and rolling about apparently in a great rage, attempting to bite those near him, and frequently lowering himself by a rope over the ship's side, as if pretending to drown himself ; but when he came near the water's edge, he always reconsidered the matter, and came on board again. He would often rifle and examine the pockets of his friends, in

quest of nuts and biscuits, which they sometimes carried for him. He had a great antipathy to the smaller tribe of monkeys, and would throw them overboard if he could ; but in his general habits and disposition there is much docility and good nature, and when not annoyed he is extremely inoffensive. He approaches, upon the whole, nearer to the human kind than any other animal."

An enormous Oran-otang, of the height of seven feet, and of a proportionate bulk, was, after many attempts, killed under a tree from which it had fallen, in consequence of several bullet wounds, at Ramboon, on the western coast of Sumatra, having, as is supposed, wandered from the large and almost impenetrable forest situated about two days' journey inland. The skin of this extraordinary creature is preserved in the museum of the Asiatic Society of Calcutta : it is of a dark leaden color, covered unequally with brownish red, shaggy and glossy hair, which is long on the flanks and shoulders. The head was well proportioned to the body, the nose prominent, the eyes large, and the mouth rather larger in proportion than that of man ; the chin was fringed with a curling beard, reaching from ear to ear, and the visage by no means disgusting. His chest was wide and expanding, and waist rather slender ; his legs rather short, as compared with his arms ; the feet and hands had very nearly the human form, except that the thumbs were smaller, and situated higher towards the wrists than in man. His walk was erect, but waddling, and not quick, unless when his hands were used to assist, or a branch of a tree, to push himself along, his chief agility being shown in climbing trees, and springing from branch to branch when pursued. The perfect state of his teeth showed that he was young, and in full vigor. He was without any vestiges of a tail.

THE PITHECOS, OR PIGMY.

By the testimonies of the ancients, the Pithecos seems to be the most gentle and docile of all the Monkey kind that was

known to them : it was common in Asia, as well as in Libya, and in the other provinces of Africa, frequented by the Greek and Roman travellers. And this has made me presume, that we must refer the animals mentioned by Leo the African, and Marmol, to this kind. "These animals (says Marmol) have feet and hands, and, if I may be allowed the expression, a human face, with an appearance of much vivacity and malice: they live upon corn, herbage, and all sorts of fruits, to obtain which they sally forth in large bodies, and plunder the gardens or villages. Before they venture out on this expedition, one of the company ascends an eminence, and surveys the country round. If there is no appearance of any person near, he makes signs to his companions to enter the vineyard or orchards, and begin their plunder: but as soon as the sentinel perceives any one coming, he instantly sets up a loud cry, and the whole company scamper off with the utmost precipitation, and, jumping from tree to tree, retreat to the mountains. It is a great curiosity to see those animals retreat; for the females carry four or five young ones upon their backs, and, with this heavy load, leap with great agility from branch to branch, though great numbers of them are taken, notwithstanding all their cunning. When they are angry, they bite; but while they are coaxed, they are very tame. Those that are tamed perform things almost incredible, and imitate mankind in almost every action they see them do." The *Pithecos* has no tail; its canine teeth are not proportionably longer than those of mankind; its face is flat, as are likewise its nails, which are rounded at the top, like those of a man; it walks erect, is about a cubit high, and of a gentle and tractable disposition. It is, however, a dirty species, and leaves an unpleasant smell wherever it goes. Besides which it has a mischievous propensity to break and destroy whatever comes in its way.

The Pigmy Apes are fattened for food by the inhabitants of the country where they are found. The mode of catching them is curious. The Apes sleep in caverns in the woods. Near these haunts the natives place vessels containing strong

liquors. The animals assemble to enjoy the unexpected repast: they drain the vessels, and the consequence is, that they become intoxicated, fall asleep, and are then easily taken.

THE GIBBON, OR LONG-ARMED APE

ALWAYS keeps its erect posture, even when it walks upon all fours, its arms being as long as its body and legs put together. We have seen one of these animals alive: it was but young, and not then more than three feet high; though we must presume that it had not attained its full size, but that when it is adult, and in its free state, it is at least four feet. It had no appearance of any tail: it had a circle of gray, bushy hair all round the face, which gave it a very remarkable appearance: its eyes were large and sunk in its head; its face resembling that of a man, tanned, and its ears well proportioned. This Ape appeared to us to be of a gentle and tractable disposition: its motions were neither rash nor precipitate. It was fed on bread, fruit, almonds, &c., and calmly received the food that was presented to it: it was very averse to cold and wet weather, and did not live long after being brought from its native country. It is a native of the East Indies, and particularly found along the coasts of Coromandel, Malacca, and the Molucca islands.

THE MAGOT.

THIS animal is generally known by the name of the Barbary Ape. Of all the Apes which have no tail, this animal can best endure the temperature of our climate. We have kept one for many years. In the summer it remained in the open air with pleasure; and in the winter, might be kept in a room without any fire. It was filthy, and of a sullen disposition: it equally makes use of a grimace to show its anger, or express its sense of hunger: its motions were violent, its manners awkward, and its physiognomy rather ugly than ridiculous. Whenever it was offended, it grinned and showed

its teeth. It put whatever was given to it into the pouches on each side of its jaws, and commonly ate every thing that was offered to it, except raw flesh, cheese, and other things of a fermentative nature. When it slept, it was fond of roosting on a wooden or iron bar. It was always kept chained, for notwithstanding its long subjection, it was neither civilized, nor fond of its keeper : apparently, it had been but badly educated ; for I have seen others of the same kind who were more sagacious, obedient, gayer, and so tractable as to be taught to dance, and suffer themselves quietly to be clothed and dressed.

This ape is about two feet and a half or three feet high, in its erect posture ; but the female is not so large as the male. It rather chooses to walk on all fours, than erect. When it sleeps, it is almost always sitting. There are two very prominent collosities on its posteriors. It differs also from the *Pithecos* ; first in the form of its snout, which is thicker and longer, like that of a dog ; whereas the *Pithecos* has a flat visage, like the human. Secondly, in having long canine teeth ; instead of which the *Pithecos* has them no longer in proportion than those of a man. Thirdly, in its nails, which are neither so flat nor so round ; and, in short, it is larger, and of a more sullen and untractable disposition than the other. It abounds in Barbary, and in the forests of India, Arabia, and Africa. In Barbary the trees are sometimes nearly covered with them.

It is probably this kind of Monkey which Robert Lade speaks of in the following terms : “ We travelled over a great mountain at the Cape of Good Hope, where we diverted ourselves with hunting the large Apes, which are there in great plenty. I am not able to represent all the tractableness of these animals which pursued us, nor the swiftness and impudence with which they returned to us after we had driven them away. Sometimes they suffered us to approach so near them, that, stopping almost close to one of these animals, to take my observations, I thought myself certain of securing him, when, taking a sudden leap, he sprang above ten paces from me, and climbed up a tree with the greatest agility.

They remained afterwards very quiet, looking on us as though they were pleased with our astonishment. There were some so exceedingly large, that if they had been of a ferocious nature, our number would not have been sufficient to secure us from their attacks. As it would have been useless to kill these animals, we made no use of our guns; but the captain, thinking to wound one of them, which was seated on a tree, after a long pursuit, had no sooner presented his piece, but the animal, probably from the remembrance of the execution of some of his companions, in the same manner, was so greatly terrified at it, that he fell almost motionless at our feet, and being stunned in the fall, we had not the least trouble to secure it: however, when it revived, we had occasion for all our strength and address to keep it, defending itself by biting those who were near it, which obliged us to bind our handkerchiefs over its head."

Tavernier tells us that some of the inhabitants of India adopt a ludicrous mode of avenging themselves on these Monkeys, who not unfrequently attack the women who are going to market, and rob them of their provisions. In an open space, near the retreat of the Apes, they place five or six baskets of rice, forty or fifty yards asunder, and near the baskets a number of stout cudgels, each two feet in length. They then hide themselves, to watch for the result. Thinking that no one sees them, the apes hasten towards the baskets. For a while they grin angrily at each other, then approach, then retire, and seem to dread coming to action for the prey. More daring than the males, the females at length advance to the baskets, and as they thrust in their heads to eat, the males on the one side rush forward to prevent them. This brings on a general engagement, and the cudgels are lustily plied till the weakest party is compelled to seek shelter in the woods. The victors then fall to upon their hard-earned meal.

The other species of Monkeys will be described in future numbers of this work.

THE PARROT.

PLATE XXIV.

Class—Aves. • *Order III.*—Scansoriæ; climbing birds.
nus—Psittachus.

THE Parrot is best known among us of all foreign birds, as it unites the greatest beauty with the greatest docility. Its voice, also, is more like a man's than that of any other: the raven is too hoarse, and the jay and magpie too shrill, to resemble the truth: the Parrot's note is of the true pitch, and capable of a number of modulations that even some of our orators might wish in vain to imitate.

The ease with which this bird is taught to speak, and the great number of words which it is capable of repeating, are no less surprising. We are assured by a grave writer, that one of these was taught to repeat a whole sonnet from Petrarch; and that I may not be wanting in my instance, I have seen a Parrot belonging to a distiller, who had suffered pretty largely in his circumstances, from an informer who lived opposite him, very ludicrously employed. This bird was taught to pronounce the ninth commandment, *Thou shalt not bear false witness against thy neighbor*, with a very clear, loud, articulate voice. The bird was generally placed in its cage over against the informer's house, and delighted the whole neighborhood with its persevering exhortations.

Willoughby tells a story of a Parrot, which is not so dull as those usually brought up when this bird's facility of talking happens to be the subject. "A Parrot belonging to king Henry the Seventh, who then resided at Westminster, in his palace by the river Thames, had learned to talk many words from the passengers as they happened to take the water. One day, sporting on its perch, the poor bird fell into the water, at the same time crying out, as loud as he could, '*A boat! twenty pounds for a boat!*' A waterman, who hap-



LIBRARY OF
CALIFORNIA

Ringed Parrots.

70 2111
1100 1100 1100 1100

pened to be near, hearing the cry, made to the place where the Parrot was floating, and taking him up, restored him to the king. As it seems the bird was a favorite, the man insisted that he ought to have a reward rather equal to his services than his trouble; and, as the Parrot had ~~cried~~ cried twenty pounds, he said the king was bound in honor to grant it. The king at last agreed to leave it to the Parrot's own determination, which the bird hearing, cried out, '*Give the knave a groat.*'"

The Parrot, which is so common as a foreign bird with us, is equally so as an indigenous bird in the climates where it is produced. The forests swarm with them; and the rook is not better known with us, than the Parrot in almost every part of the East and West Indies. It is in vain that our naturalists have attempted to arrange the various species of this bird; new varieties daily offer to puzzle the system-maker, or to demonstrate the narrowness of his catalogues. Linnæus makes the number of its varieties amount to forty-seven; while Brisson doubles the number, and extends his catalogue to ninety-five. Perhaps even this list might be increased, were every accidental change of color to be considered as constituting a new species. But, in fact, natural history gains but little by these discoveries; and as its dominions are extended it becomes more barren. It is asserted by sensible travellers, that the natives of Brazil can change the color of a Parrot's plumage by art. If this be true, and I am apt to believe the information, they can make new species at pleasure, and thus cut out endless work for our nomenclators at home.

Those who usually bring these birds over, are content to make three or four distinctions, to which they give names; and with these distinctions I will content myself also. The large kind, which are of the size of a raven, are called *macaws*; the next size are simply called *Parrots*; those which are entirely white are called *Lories*; and the lesser size of all are called *Parakeets*. The difference between even these is rather in size than in any other peculiar conformation, as

they are all formed alike, having toes, two before and two behind, for climbing and holding ; strong hooked bills for breaking open nuts, and other hard substances, on which they feed ; and loud, harsh voices, by which they fill their native woods with clamor.

But there are further peculiarities in their conformation ; and, first, their toes are contrived in a singular manner, which appears when they walk or climb, and when they are eating. For the first purpose they stretch two of their toes forward, and two backward ; but when they take their meat, and bring it to their mouths with their foot, they dexterously and nimbly turn the greater hind toe forward, so as to take a firmer grasp of the nut or the fruit they are going to feed on, standing all the while upon the other leg. Nor even do they present their food in the usual manner ; for other animals turn their meat inwards to the mouth ; but these, in a seemingly awkward position, turn their meat outwards, and thus hold the hardest nuts, as if in one hand, till with their bills they break the shell, and extract the kernel.

The bill is fashioned with still greater peculiarities ; for the upper chap, as well as the lower, are both moveable. In most other birds the upper chap is connected, and makes but one piece with the skull ; but in these, and in one or two species of the feathered tribe more, the upper chap is connected to the bone of the head by a strong membrane, placed on each side, that lifts and depresses it at pleasure. By this contrivance they can open their bills the wider ; which is not a little useful, as the upper chap is so hooked and so overhanging, that, if the lower chap only had motion, they could scarcely gape sufficiently to take any thing in for their nourishment.

Such are the uses of the beak and the toes, when used separately ; but they are often employed both together, when the bird is exercised in climbing. As these birds cannot readily hop from bough to bough, their legs not being adapted for that purpose, they use both the beak and the feet ; first catching hold with the beak, as if with a hook, then drawing up the legs and fastening them, then advancing the head and

beak again, and so putting forward the body and the feet alternately, till they attain the height they aspire to.

The tongue of this bird somewhat resembles that of a man ; for which reason some pretend that it is so well qualified to imitate the human speech ; but the organs by which these sounds are articulated lie farther down in the throat, being performed by the great motion which the *os hyoides* has in these birds above others.

The parrot, though common enough in Europe, will not, however, breed here. The climate is too cold for its warm constitution ; and though it bears our winter when arrived at maturity, yet it always seems sensible of its rigor, and loses both its spirit and appetite during the colder part of the season. It then becomes torpid and inactive, and seems quite changed from that bustling, loquacious animal which it appeared in its native forest, where it is almost ever upon the wing. Notwithstanding, the parrot lives even with us a considerable time, if it be properly attended to ; and, indeed, it must be owned, that it employs but too great a part of some people's attention.

The extreme sagacity and docility of the bird may plead as the best excuse for those who spend whole hours in teaching their parrots to speak ; and, indeed, the bird, on those occasions, seems the wisest animal of the two. It at first obstinately resists all instruction ; but seems to be won by perseverance, makes a few attempts to imitate the first sounds, and when it has got one word distinct, all the succeeding come with greater facility. The bird generally learns most in those families where the master or mistress have the least to do ; and becomes more expert in proportion as its instructors are idly assiduous. In going through the towns of France some time since, I could not help observing how much plainer their Parrots spoke than ours, and how very distinctly I understood their Parrots speak French, when I could not understand our own, though they spoke my native language. I was at first for ascribing it to the different qualities of the two languages, and was for entering into an ela-

borate discussion on the vowels and consonants ; but a friend that was with me solved the difficulty at once, by assuring me that the French women scarcely did any thing else the whole day than sit and instruct their feathered pupils ; and that the birds were thus distinct in their lessons in consequence of continual schooling.

The parrots of France are certainly very expert, but nothing to those of the Brazils, where the education of a parrot is considered as a very serious affair. The history of Prince Maurice's parrot, given us by Mr. Locke, is too well known to be repeated here ; but Clusius assures us that the parrots of that country are the most sensible and cunning of all animals not endued with reason. The great parrot, called the *aicurus*, the head of which is adorned with yellow, red and violet, the body green, the ends of the wings red, the feathers of the tail long and yellow ; this bird, he asserts, which is seldom brought into Europe, is a prodigy of understanding. "A certain Brazilian woman, that lived in a village two miles distant from the island on which we resided, had a parrot of this kind which was the wonder of the place. It seemed endued with such understanding, as to discern and comprehend whatever she said to it. As we sometimes used to pass by that woman's house, she used to call upon us to stop, promising, if we gave her a comb, or a looking-glass, that she would make her parrot sing and dance to entertain us. If we agreed to her request, as soon as she had pronounced some words to the bird, it began not only to leap and skip on the perch on which it stood, but also to talk and to whistle, and imitate the shoutings and exclamations of the Brazilians when they prepare for battle. In brief, when it came into the woman's head to bid it sing, it sang ; to dance, it danced. But if, contrary to our promise, we refused to give the woman the little present agreed on, the parrot seemed to sympathize in her resentment, and was silent and immoveable ; neither could we, by any means, provoke it to move either foot or tongue.

This sagacity, which parrots show in a domestic state, seems also natural to them in their native residence among the

woods. They live together in flocks, and mutually assist each other against other animals, either by their courage or their notes of warning. They generally breed in hollow trees, where they make a round hole, and do not line their nests within. If they find any part of a tree beginning to rot from the breaking off of a branch, or any such accident, this they take care to scoop, and to make the hole sufficiently wide and convenient; but it sometimes happens that they are content with the hole which a woodpecker has wrought out with greater ease before them; and in this they prepare to hatch and bring up their young.

They lay two or three eggs; and probably the smaller kind may lay more; for it is a rule that universally holds through nature, that the smallest animals are always the most prolific; for being, from their natural weakness, more subject to devastation, nature finds it necessary to replenish the species by superior fecundity. In general, however, the number of their eggs is stinted to two, like those of the pigeon, and they are about the same size. They are always marked with little specks, like those of a partridge; and some travellers assure us, that they are always found in the trunks of the tallest, straightest, and the largest trees. The natives of those countries, who have little else to do, are very assiduous in spying out the places where the parrot is seen to nestle, and generally come with great joy to inform the Europeans, if there be any, of the discovery. As those birds have always the greatest docility that are taken young, such a nest is often considered as worth taking some trouble to be possessed of; and, for this purpose, the usual method of coming at the young is, by cutting down the tree. In the fall of the tree it often happens that the young parrots are killed; but if one of them survives the shock, it is considered as a sufficient recompense.

Such is the avidity with which these birds are sought when young; for it is known they always speak best when their ear has not been anticipated by the harsh notes of the wild ones. But as the natives are not able upon all occasions to supply the demand for young ones, they are contented to take

the old ; and for that purpose shoot them in the woods with heavy arrows, headed with cotton, which knock down the bird without killing it. The parrots thus stunned are carried home : some die, but others recover, and, by kind usage and plentiful food, become talkative and noisy.

But it is not for the sake of their conversation alone that the parrot is sought after among the savages ; for though some of them are but tough and ill tasted, yet there are other sorts, particularly of the small parakeet tribe, that are very delicate food. In general it obtains, that whatever fruit or grain these birds mostly feed upon, their flesh partakes of the flavor, and becomes good or ill tasted, according to the quality of their particular diet. When the guava is ripe, they are at that season fat and tender ; if they feed upon the seed of the acajou, their flesh contracts an agreeable flavor of garlic ; if they feed upon the seed of the spicy trees, their flesh then tastes of cloves and cinnamon ; while, on the contrary, it is insupportably bitter if the berries they feed on are of that quality. The seed of the cotton tree intoxicates them in the same manner as wine does man ; and even wine itself is drunk by parrots, as Aristotle assures us, by which they are thus rendered more talkative and amusing. But of all food, they are fondest of the carthamus, or bastard saffron ; which, though strongly purgative to man, agrees perfectly with their constitution, and fattens them in a very short time.

Of the parakeet kind in Brasil, Labat assures us, that they are the most beautiful in their plumage, and the most talkative birds in nature. They are very tame, and appear fond of mankind ; they seem pleased with holding parley with him ; they never have done ; but while he continues to talk, answer him, and appear resolved to have the last word : but they are possessed of another quality, which is sufficient to put an end to this association ; their flesh is the most delicate imaginable, and highly esteemed by those who are fonder of indulging their appetites than their ears. The fowler walks into the woods, where they keep in abundance, but as they are green, and exactly the color of the leaves among which

they sit, he only hears their prattle, without being able to see a single bird; he looks round him, sensible that his game is within gun-shot in abundance, but is mortified to the last degree that it is impossible to see them. Unfortunately for these little animals, they are restless, and ever on the wing, so that in flying from one tree to another, he has but too frequent opportunities of destroying them; for as soon as they have stripped the tree on which they sat of all its berries, some one of them flies off to another; and, if that be found fit for the purpose, it gives a loud call, which all the rest resort to:—That is the opportunity the fowler has long been waiting for; he fires in among the flock, while they are yet on the wing; and he seldom fails of bringing down a part of them. But it is singular enough to see them when they find their companions fallen. They set up a loud outcry, as if they were chiding their destroyer, and do not cease till they see him preparing for a second charge.

But though there are so many motives for destroying these beautiful birds, they are in very great plenty; and in some countries on the coast of Guinea, they are considered by the negroes as their greatest tormentors. The flocks of parrots persecute them with their unceasing screaming, and devour whatever fruits they attempt to produce by art in their little gardens. In other places they are not so destructive, but sufficiently common; and, indeed, there is scarce a country of the tropical climates that has not many of the common kinds, as well as some peculiarly its own. Travellers have counted more than a hundred different kinds on the continent of Africa only: there is one country in particular, north of the Cape of Good Hope, which takes its name from the multitude of parrots which are seen in its woods. There are white parrots seen in the burning regions of Ethiopia; in the East Indies they are of the largest size; in South America they are docile and talkative; in all the islands of the Pacific Sea and the Indian Ocean, they swarm in great variety and abundance, and add to the splendor of those woods which nature has dressed in eternal green.

So generally are these birds known at present, and so great is their variety, that nothing seems more extraordinary than that there was but one sort of them known among the ancients, and that at a time when they pretended to be masters of the world. If nothing else could serve to show the vanity of a Roman's boast, the parrot tribe might be an instance, of which there are a hundred kinds now known; not one of which naturally breeds in the countries that acknowledged the Roman power. The green parakeet, with a red neck, was the first of this kind that was brought into Europe, and the only one that was known to the ancients, from the time of Alexander the Great to the age of Nero; this was brought from India; and when afterwards the Romans began to seek and rummage through all their dominions, for new and unheard-of luxuries, they at last found out others in Gaganda, an island of Ethiopia, which they considered as an extraordinary discovery.

Parrots have usually the same disorders with other birds; and they have one or two peculiar to their kind. They are sometimes struck by a kind of apoplectic blow, by which they fall from their perches, and for a while seem ready to expire. The other is the growing of the beak, which becomes so very much hooked as to deprive them of the power of eating.—These infirmities, however, do not hinder them from being long-lived; for a parrot, well kept, will live five or six and twenty years.

ANECDOTES OF THE BEAR.

[See Vol. 1. page 257.]

At Berne, in Switzerland, two bears were kept in a kind of domestic state, for thirty years. They were kept in a large square ditch, so deep that they could not climb out, and so wide as to allow them to run about for exercise. One end of the ditch was covered over on the top, so as to make a warm and comfortable place for the animals to go when it was cold, and in which they might sleep when they chose. In the middle of the ditch, there was a large hole in the ground, into which, every spring, a tree was cut green from the woods, and placed. There was also in the ditch a trough of fresh water, into which the animals could go in hot weather, and cool themselves. Thus pleasantly situated, these bears seemed to enjoy themselves perfectly well, and to have the best of health. They did not, like other animals, which are kept tied up, and allowed no liberty, pine for their native woods. Every year, they reared a little family, of two or three cubs. The mother was excessively fond of her young, but the keeper always took care to shut the father away from them, when they were small, for fear he would do them some injury. The old bears seemed to take the greatest delight in climbing the trees, which were placed in their ditch for that purpose; and the young ones, when they became strong enough to climb, took great pleasure in doing the same, and seemed to be as proud of their performance, as a young child is of his, when he first begins to run alone.

At one time, it became necessary to separate the parents, for the purpose of digging them a new ditch, so that they did not see, or come near each other, for many hours. When they met again, it was pleasant to see in such creatures, how much love and affection they had for each other. Both raised themselves up on the hind feet, and put their fore legs around one another, with the greatest kindness.

After having lived about thirty-one years together, the male was killed by a fall from one of the trees, and thus this long and interesting friendship was destroyed. The female appeared for a time fully sensible of her loss, and so great was her affliction, that for several days she took little or no nourishment. After this, however, she seemed to forget her former companion, and took her food, and became lively as before.

Another anecdote of the bear is related as follows:—Leopold, Duke of Lorraine, had a bear named Marco, which was kept in a small den, or hut placed in a barn. During the winter of 1709, some very poor people, who had liked to have perished with the cold, went into the barn for shelter.—Among these poor people there was a little boy, who being very cold, and seeing that Marco's den was a snug and warm place, went into it, without thinking of the danger of doing so. Marco, however, instead of tearing the poor little fellow in pieces, as might have been expected, took him between his paws and hugged him up to his breast, and kept him warm and comfortable until morning; he then let him go to ramble about the streets of the city. At evening the boy returned to the bear, who was glad to see him, and took him between his paws to keep him warm, as before. For several nights the poor little boy had no other place to sleep, but with the bear, and what was still more singular, the animal kept a part of his food, to give him for his supper when he came. The keeper of the bear knew nothing of this for a number of days. At length, going one evening later than usual, to give the bear his supper, he was surprised to see the animal roll his eyes in a very furious manner at him. The cause of this strange conduct, the keeper did not at first understand, but on looking more closely, he saw to his astonishment, that the bear had a child clasped in his arms, fast asleep, and that his fierce looks were intended to warn him, not to awake the child by making a noise. The keeper found, when he placed the food before him, that the animal did not seize upon it as usual, but lay still without touching it, for fear, as he supposed, of awaking the child.

A report of this strange story was soon carried to the Duke, who, with some of his nobles, wished to see so curious and interesting a sight with their own eyes. They therefore one night went and staid near the bear's hut, where they could now and then look in, and see what was doing. They saw with astonishment that the animal never stirred, so long as the boy lay still and continued to sleep. The child awaked very early in the morning, and was much ashamed to find that the Duke and his gentlemen were looking at him; he was also afraid of being punished, for being found there. The bear all this time, was trying to make the boy eat what had been brought to him the night before, and which he finally did, at the request of the gentlemen. The Duke was so much pleased with this singular friendship, that he had the little boy fed and taken care of, but the poor little fellow died a short time after.

BEAR HUNTING.—The substance of this is from Dr. Godman's book. A common mode of hunting the black bear, is to follow him with two or three dogs. When the creature finds that he is pursued, he will run straight forward, eight or ten miles, or farther, if not overtaken sooner. When the dogs come up with him, he turns and defends himself with great ferocity, so that if they do not take care to avoid his grasp, he will kill them on the spot. To avoid the dogs, he often climbs a tree, before they overtake him, but here he has very little rest, for as soon as he sees that the hunter is coming, he throws himself to the ground and runs away as fast as he can, being still pursued and vexed by these animals. Again he finds himself obliged to climb a tree, to avoid his enemies, and goes up to the very top, where he tries to hide himself among the branches, so that the hunter cannot see him. But the dogs will show the hunter where he is, whether he can see him or not, and coming to the tree, he strikes against it with his hatchet, as though he was going to cut it down. The bear bearing this, and knowing that he cannot make his escape down the trunk of the tree, goes to one of the longest branches,

and sliding down to its end, then gathers himself up in the form of a ball, and lets go his hold ; thus falling from near the top of the tree to the ground. It is said that the poor creature sometimes throws himself in this way from such a height, as to bound several feet high, when he strikes the ground. He then jumps up, and if his bones are not broken, runs off as fast as he can. At length, the poor beast becomes worn out with his constant exertions to escape, and finding that he can neither run away from the dogs, nor hide himself from the hunters, turns around, and defends himself against them as well as he can. The hunters now have time to come up, and while the bear is doing his best to keep the dogs off, or to hide himself behind some fallen tree, they shoot him with a rifle, and thus the meat and skin of the animal become the reward of the hunter's toil.

No 25



Geo. Charles

THE FOX.

PLATE XXV.

Class—Mammalia. *Order III*—Carnaria, or butchering animals—*Family III*—Carnivora, flesh eaters. *Tribe II*—Digitigrada, walking on the toes. *Genus*—Canis Vulpes.

THE FOX very exactly resembles the wolf (see p. 37) and the dog internally ; and although he differs greatly from both in size and carriage, yet when we come to examine his shapes minutely, there will appear to be very little difference in the description. Were, for instance, a painter to draw from a natural historian's exactest description the figure of a dog, a wolf, and a fox, without having ever seen either, he would be very apt to confound all these animals together ; or rather he would be unable to catch those peculiar outlines that no description can supply. Words will never give any person an exact idea of forms any way irregular ; for although they be extremely just and precise, yet the numberless discriminations to be attended to will confound each other, and we shall no more conceive the precise form, than we should be able to tell when one pebble more was added or taken away from a thousand. To conceive, therefore, how the fox differs in form from the wolf or the dog, it is necessary to see all three, or at least to supply the defects of description by examining the difference in a print.

The fox is of a slenderer make than the wolf, and not near so large ; for as the former is above three feet and a half long, so the other is not above two feet three inches. The tail of the fox also is longer in proportion and more bushy ; its nose is smaller and approaching more nearly to that of the grayhound, and its hair softer. On the other hand, it differs from the dog in having its eyes obliquely situated, like those of the wolf ; its ears are directed also in the same manner as those of the wolf, and its head is equally large in proportion to its

size. It differs still more from the dog in its strong offensive smell, which is peculiar to the species, and often the cause of their death. However, some are ignorantly of opinion that it will keep off infectious diseases, and they preserve this animal near their habitations for that very purpose.

The fox has since the beginning been famous for his cunning and his arts, and he partly merits his reputation.— Without attempting to oppose either the dogs or the shepherds, without attacking the flock, or alarming the village, he finds an easier way to subsist, and gains by his address what is denied to his strength or courage. Patient and prudent, he waits the opportunity of depredation, and varies his conduct with every occasion. His whole study is his preservation ; although nearly as indefatigable, and actually more swift than the wolf, he does not entirely trust to either, but makes himself an asylum, to which he retires in case of necessity ; where he shelters himself from danger, and brings up his young.

As among men, those who lead a domestic life are more civilized and more endued with wisdom than those who wander from place to place ; so, in the inferior ranks of animated nature, the taking possession of a home supposes a degree of instinct which others are without. The choice of the situation for this domicile, the art of making it convenient, of hiding its entrance, and securing it against more powerful animals, are all so many marks of superior skill and industry. The fox is furnished with both, and turns them to his advantage. He generally keeps his kennel at the edge of the wood, and yet within an easy journey of some neighboring cottage.— From thence he listens to the crowing of the cock, and the cackling of the domestic fowls. He scents them at a distance ; he seizes his opportunity, conceals his approaches, creeps slyly along, makes the attack, and seldom returns without his booty. If he be able to get into the yard, he begins by leveling all the poultry without remorse, and carrying off a part of the spoil, hides it at some convenient distance, and again returns to the charge. Taking off another fowl in the same

manner, he hides that also, but not in the same place ; and this he practices for several times together, until the approach of day, or the noise of the domestics, give him warning to retire. The same arts are practised when he finds birds entangled in springes laid for them by the fowler ; the fox takes care to be beforehand, very expertly takes the bird out of the snare, hides it for three or four days, and knows very exactly when and where to return to avail himself of the hidden treasure. He is equally alert in seizing the young hares and rabbits before they have strength enough to escape him, and when the old ones are wounded and fatigued, he is sure to come upon them in their moments of distress, and to show them no mercy. In the same manner he finds out birds' nests, seizes the partridge and the quail while sitting, and destroys a large quantity of game. The wolf is most hurtful to the peasant, but the fox to the gentleman. In short, nothing that can be eaten seems to come amiss ; rats, mice, serpents, toads, and lizards. He will, when urged by hunger, eat vegetables and insects ; and those that live near the sea-coasts will, for want of other food, eat crabs, shrimps, and shell-fish. The hedge-hog in vain rolls itself up into a ball to oppose him ; this determined glutton teases it until it is obliged to appear uncovered, and then he devours it.—The wasp and the wild bee are attacked with equal success.—Although at first they fly out upon the invader, and actually oblige him to retire, this is but for a few minutes, until he has rolled himself upon the ground, and thus crushed such as stick to his skin ; he then returns to the charge, and at last, by perseverance, obliges them to abandon their combs ; which he greedily devours, both wax and honey.

The chase of the fox requires less preparation than that of the wolf, and it is also more pleasant and amusing. As dogs have a natural repugnance to pursue the wolf, so they are equally alert in following the fox ; which they prefer even to the chase of the hare or the buck. The huntsmen, as upon other occasions, have their cant terms for every part of this chase. The fox the first year is called a *cub* ; the second, a

fox ; and the third an *old fox* ; his tail is called the *brush* or *drag*. He is usually pursued by a large kind of harrier or hound, assisted by terriers, or a smaller breed, that follow him into his kennel, and attack him there. The instant he perceives himself pursued, he makes to his kennel, and takes refuge at the bottom of it, where for a while he loses the cry of his enemies ; but the whole pack coming to the mouth, redouble their vehemence and rage, and the little terrier boldly ventures in. It often happens that the kennel is made under a rock, or among the roots of old trees : and in such cases the fox cannot be dug out, nor is the terrier able to contend with him at the bottom of his hole. By this contrivance he continues secure ; but when he can be dug out, the usual way is to carry him in a bag to some open country, and there set him loose before the hounds. The hounds and the men follow, barking and shouting wherever he runs ; and the body being strongly employed, the mind has not time to make any reflection on the utility of the pursuit. What adds to this entertainment is the strong scent which the fox leaves, that always keeps up a full cry ; although as his scent is stronger than that of the hare, it is much sooner evaporated. His shifts to escape when all retreat is cut off to his kennel, are various and surprising. He always chooses the most woody country, and takes those paths that are most embarrassed with thorns and briars. He does not double, nor use the un-availing shifts of the hare ; but flies in a direct line before the hounds, though at no very great distance ; manages his strength ; takes to the low and plashy grounds, where the scent will be less apt to lie ; and at last, when overtaken, he defends himself with desperate obstinacy, and fights in silence to the very last gasp.

The fox, though resembling the dog in many respects, is nevertheless very distinct in his nature, refusing to engender with it ; and though not testifying the antipathy of the wolf, yet discovering nothing more than indifference. This animal also brings forth fewer at a time than the dog, and that but once a year. Its litter is generally from four to six, and sel-

dom less than three. The female goes with young about six weeks, and seldom stirs out while pregnant, but makes a bed for her young, and takes every precaution to prepare for their production. When she finds the place of their retreat discovered, and that her young have been disturbed during her absence, she removes them one after the other in her mouth, and endeavors to find them out a place of better security. A remarkable instance of this animal's parental affection happened in the county of Essex. A she-fox that had, as it should seem, but one cub, was unkennelled by a gentleman's hounds near Chelmsford, and hotly pursued. In such a case, when her own life was in imminent peril, one would think it was not a time to consult the safety of her young: however, the poor animal, braving every danger, rather than leave her cub behind to be worried by the dogs, took it up in her mouth, and ran with it in this manner for some miles. At last, taking her way through a farmer's yard, she was assaulted by a mastiff, and at last obliged to drop her cub, which was taken up by the farmer. I was not displeased to hear that this faithful creature escaped the pursuit, and at last got off in safety. The cubs of the fox are born blind, like those of the dog; they are eighteen months or two years in coming to perfection, and live about twelve or fourteen years.

As the fox makes war upon all animals, so all others seem to make war upon him. The dog hunts him with peculiar acrimony; the wolf is still a greater and more necessitous enemy, who pursues him to his very retreat. Some pretend to say, that, to keep the wolf away, the fox lays at the mouth of its kennel a certain herb, to which the wolf has a particular aversion. This, which no doubt is a fable, at least shows that these two animals are as much enemies to each other as to all the rest of Animated Nature. But the fox is not hunted by quadrupeds alone; for the birds, who know him for their mortal enemy, attend him in his excursions, and give each other warning of their approaching danger. The daw, the magpie, and the blackbird conduct him along, perching on the hedges as he creeps below, and, with their cries and notes

of hostility, apprise all other animals to beware ; a caution which they perfectly understand, and put into practice. The hunters themselves are often informed, by the birds, of the place of his retreat, and set the dogs into those thickets where they see them particularly noisy and querulous. So that it is the fate of this pretty plunderer to be detested by every rank of animals ; all the weaker classes shun, and all the stronger pursue him.

The fox, of all wild animals, is most subject to the influence of climate ; and there are found as many varieties in this kind almost as in any of the domestic animals. The generality of foxes, as is well known, are red ; but there are some of a grayish cast.

In the colder countries round the pole, the foxes are of all colors ; black, blue, gray, iron gray, silver gray, white, white with red legs, white with black heads, white with the tip of the tail black, red with the throat and belly entirely white, and lastly, with a stripe of black running along the back, and another crossing it at the shoulders.

Various methods are made use of to entrap these suspicious animals, as steel or fox traps, and falls made of logs, &c. ; but much nicety is required in setting them, or the fox will avoid them. A very neat and successful mode of fixing a steel trap, has been described to us. After having fixed on a place which they frequent, the trap is to be opened and its exact form traced on the ground, and as much earth removed as will contain it without pressure ; the sod removed from the top is to be laid over it, and the lines of separation covered with mould, and grass stuck in it. A bait of cheese is to be placed above, and in two or three places in the neighborhood, and it is better to bait the spot in which the trap is set, for some days previous, to remove all fear. Some of the best trappers ascribe their success to the use of assafœtida, castoreum, and other analogous substances, with which they rub their traps, and small twigs set up in the neighborhood, alleging that these substances invariably attract the animals. Crantz, in his History of Holland, informs us, that this species

also exert an extraordinary degree of cunning in their mode of obtaining fish. They go into the water, and make a splash with their feet in order to excite their curiosity, and when they come up; seize them. The mode in which some species entrap water fowl is also extremely ingenious. They advance a little way into the water and afterwards retire, playing a thousand antic tricks on the banks. The fowl approach, and when they come near, the animal ceases, that he may not alarm them, moving only his tail about, and that very gently, till the birds approach so near that he is enabled to seize one or more. But these are trifling displays of ingenuity in comparison to some which are related of these animals. Thus, Pliny says, that such is the sagacity of foxes that they will not venture on any piece of ice until they have ascertained its thickness and strength, by applying their ear to it. A late traveller in Norway, we believe Capell Brooke, states that the foxes of the North Cape take sea fowl by letting one of their companions over the edge of a cliff by his tail, and where this does not enable them to reach their prey, that a line is formed of no inconsiderable length, by seizing each others tails in their mouths. That credulous author, Pontopidan, also informs us, "that a certain person was surprised on seeing a fox near a fisherman's house, laying a parcel of fishes' heads in a row: he waited the event, the fox hid himself behind them, and made a booty of the first crow that came for a bit of them."

This character of cunning and extreme prudence in the fox, renders him extremely difficult to be destroyed, or taken. As soon as he has acquired a little experience, he is not to be deceived by the snares laid for him, and the moment he recognizes them, nothing can induce him to approach them, even when suffering the severest pangs of hunger.

Some curious instances, says Mr. Jesse, have been related to me of the cunning evinced by foxes, not only in the preservation of their lives, but in procuring themselves food. A fox, which had been frequently hunted in Leicestershire, was always lost at a particular place, where the hounds could

never recover the scent. This circumstance having excited some curiosity, it was at last discovered that he jumped upon, and ran along a clipped hedge, at the end of which was an old pollard oak tree, hollow in the middle. He crept into this hollow, and lay concealed till the alarm was over. His retreat, however, being discovered, he was driven from it and killed. Another fox selected a magpie's nest as a place of retreat, and was discovered in consequence of a laboring man having observed a quantity of bones, feathers of birds, &c., on the ground under the nest. The following fact may be relied upon, extraordinary as it may appear. I received it from a gentleman of the strictest veracity, who communicated it to me very recently, on his return from the south of France, where he had been residing for some months. A friend of his, with whom he passed much of his time there, was in the habit of shooting in a part of the country where there was much wild and rocky ground. Part of this rocky ground was on the side of a very high hill, which was not accessible for a sportsman, and from which both hares and foxes took their way in the evening to the plain below. There were two channels, or gullies made by the rains, leading from these rocks to the lower ground. Near one of these channels, the sportsman in question, and his attendant, stationed themselves one evening, in hopes of being able to shoot some hares. They had not been there long, when they observed a fox coming down the gully, and followed by another. After playing together for a little time, one of the foxes concealed himself under a large stone or rock, which was at the bottom of the channel, and the other returned to the rocks. He soon, however, came back, chasing a hare before him. As the hare was passing the stone where the first fox had concealed himself, he tried to seize her by a sudden spring, but missed his aim. The chasing fox then came up, and finding that his expected prey had escaped, through the want of skill in his associate, he fell upon him, and they both fought with so much animosity, that the parties who had been watching their proceedings came up and destroyed them both.

Pontoppidan informs us, that when a fox observes an otter go into the water to fish, he will frequently hide himself behind a stone; and when the otter comes to shore with his prey, will make such a spring upon him, that the affrighted animal runs off, and leaves his booty behind. Mr. Bingley quotes this anecdote, but without giving much credit to it.

In Smith's Directory for destroying vermin, we find it said that the fox exhibits a great degree of cunning in digging young rabbits out of their burrows. He does not try to enter the hole; for in this case he would not only have to enlarge it, but have also to dig several feet along the ground, under the surface of the earth; but he follows their scent above, till he comes to the end, where they lie; and then scratching up the earth, descends immediately upon and devours them.

Buffon considered that the fox ought to be placed among the higher order of quadrupeds, from the great care and dexterity they show in the construction of their habitations. Some of them are placed in extraordinary situations, a fox having been known to let himself drop from the edge of a precipice on a projecting piece of rock just below it, from which he got into his hole or den. These dens are sometimes provided with outlets, by which the fox may effect his escape.

Buffon says that foxes are so fond of honey, that they will sometimes attack bee-hives, and even the nests of wasps, for the sake of what they can find to eat; and that they frequently meet with so rough a reception as to be obliged to roll themselves on the ground, to get rid of the insects that are stinging them. They then, he says, return to the charge, and generally succeed in securing the combs. I have, however, kept bees where there were many foxes in the neighborhood, who could have gained access to my hives without any difficulty. I never had any reason to suspect that they in any way molested them, nor did it ever fall in my way to hear an instance of this having happened in this country.

OF SERPENTS.

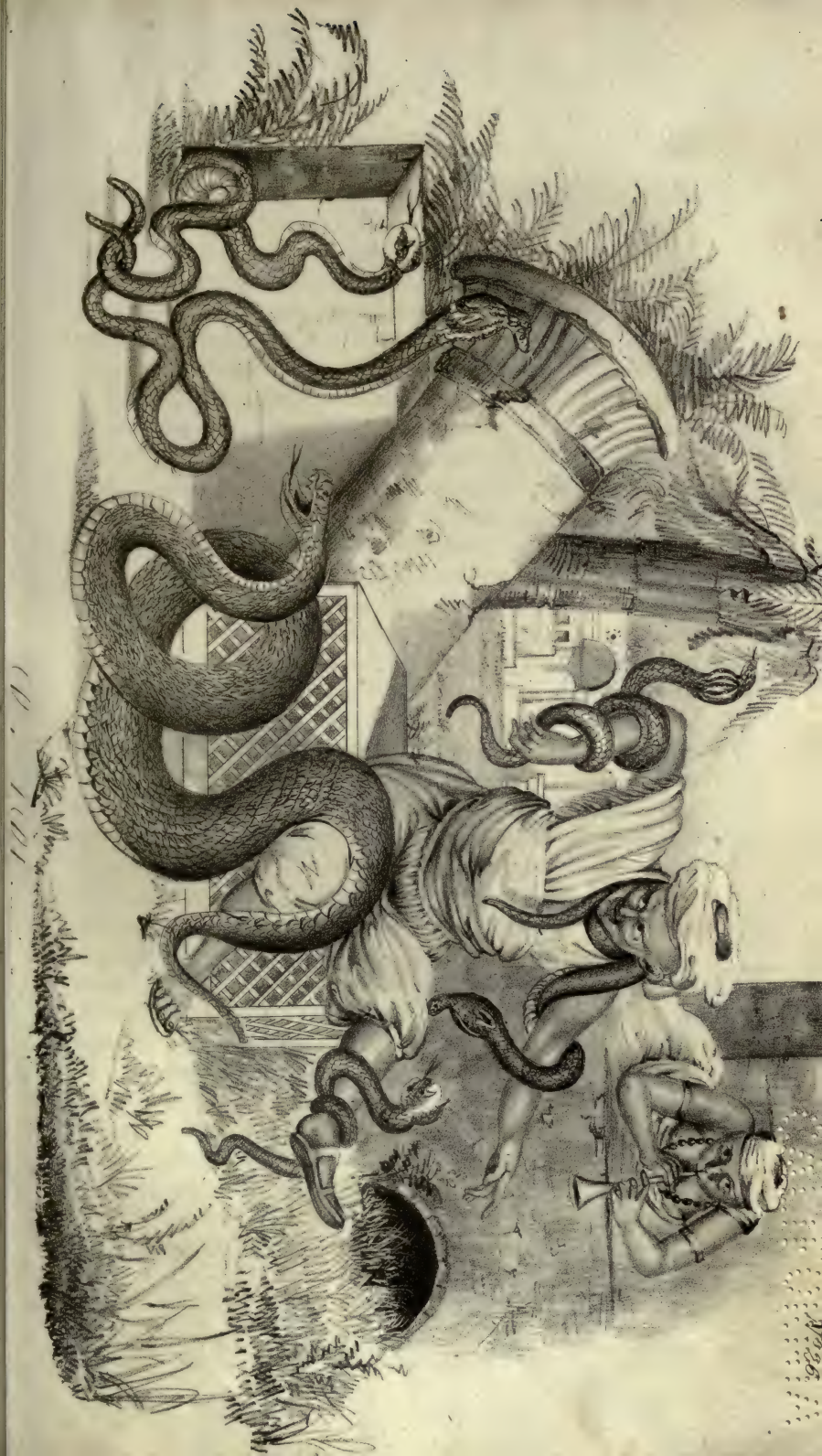
PLATE XXVI.

Class—Reptilia. *Order III.*—Ophidia : Serpents.

WE now come to a tribe that not only their deformity, their venom, their ready malignity, but also our prejudices, and our very religion, have taught us to detest. The serpent has from the beginning been the enemy of man ; and it has hitherto continued to terrify and annoy him, notwithstanding all the arts that have been practised to destroy it. Formidable in itself, it deters the invader from the pursuit ; and from its figure capable of finding shelter in a little space, it is not easily discovered by those who would venture to try the encounter. Thus possessed at once of potent arms and inaccessible or secure retreats, it baffles all the arts of man, though never so earnestly bent upon its destruction.

For this reason, there is scarcely a country in the world that does not still give birth to this poisonous brood, that seem formed to quell human pride, and repress the boasts of security. Mankind have driven the lion, the tiger, and the wolf, from their vicinity ; but the snake and the viper still defy their power, and frequently punish their insolence.

The various malignity that has been ascribed to European serpents of old, is now utterly unknown ; there are not above three or four kinds that are dangerous, and their poison operates in all in the same manner. A burning pain in the part, easily removable by timely applications, is the worst effect that we experience from the bite of the most venomous serpents of Europe. But though we have thus reduced these dangers, having been incapable of wholly removing them, in other parts of the world they still rage with all their ancient malignity. Nature seems to have placed them as sentinels to deter mankind from spreading too widely, and from seeking new abodes till they have thoroughly cultivated those at





home. In the warm countries that lie within the tropic, as well as in the cold regions of the north, where the inhabitants are few, the serpents propagate in equal proportion. But of all countries, those regions have them in the greatest abundance where the fields are unpeopled and fertile, and where the climate supplies warmth and humidity. All along the swampy banks of the river Niger or Oroonoko, where the sun is hot, the forests thick, and the men but few, the serpents cling among the branches of the trees in infinite numbers, and carry on an unceasing war against all other animals in their vicinity. Travellers have assured us, that they have often seen large snakes twining round the trunk of a tall tree, encompassing it like a wreath, and thus rising and descending at pleasure. In these countries, therefore, the serpent is too formidable to become an object of curiosity, for it excites much more violent sensations.

We are not, therefore, to reject as wholly fabulous, the accounts left us by the ancients of the terrible devastations committed by a single serpent. It is probable, in early times, when the arts were little known, and mankind were but thinly scattered over the earth, that serpents, continuing undisturbed possessors of the forest, grew to an amazing magnitude; and every other tribe of animals fell before them. It then might have happened, that serpents reigned the tyrants of a district for centuries together. To animals of this kind, grown by time and rapacity to a hundred or a hundred and fifty feet in length, the lion, the tiger, and even the elephant itself, were but feeble opponents. The dreadful monster spread desolation round him; every creature that had life was devoured, or fled to a distance. That horrible *fætor*, which even the commonest and the most harmless snakes are still found to diffuse, might, in these larger ones, become too powerful for any living being to withstand; and while they preyed without distinction, they might thus also have poisoned the atmosphere around them. In this manner, having for ages lived in the hidden and unpeopled forest, and finding, as their appetites were more powerful, the quan

tity of their prey decreasing, it is possible they might venture boldly from their retreats, into the more cultivated parts of the country, and carry consternation among mankind, as they had before desolation among the lower ranks of nature. We have many histories of antiquity, presenting us such a picture ; and exhibiting a whole nation sinking under the ravages of a single serpent. At that time man had not learned the art of uniting the efforts of many, to effect one great purpose. Opposing multitudes only added new victims to the general calamity, and increased mutual embarrassment and terror. The animal was therefore to be singly opposed by him who had the greatest strength, the best armor, and the most undaunted courage. In such an encounter hundreds must have fallen ; till one, more lucky than the rest, by a fortunate blow, or by taking the monster in its torpid interval, and surcharged with spoil, might kill, and thus rid his country of the destroyer. Such was the original occupation of heroes ; and those who first obtained that name from their destroying the ravagers of the earth, gained it much more deservedly than their successors, who acquired their reputation only for their skill in destroying each other. But as we descend into more enlightened antiquity, we find these animals less formidable, as being attacked in a more successful manner. We are told, that while Regulus led his army along the banks of the river Bagrada, in Africa, an enormous serpent disputed his passage over. We are assured by Pliny, who says that he himself saw the skin, that it was a hundred and twenty feet long, and that it had destroyed many of the army. At last, however, the battering engines were brought out against it ; and these assailing it at a distance, it was soon destroyed. Its spoils were carried to Rome, and the general was decreed an ovation for his success.— There are, perhaps, few facts better ascertained in history than this : an ovation was a remarkable honor, and was given only for some signal exploit, that did not deserve a triumph : no historian would offer to invent that part of the story at least, without being subject to the most shameful detection.

To us their slender form, their undulating motion, their vivid coloring, their horrid stench, their forked tongue, and their envenomed fangs, are totally harmless; and in this country their uses even serve to counterbalance the mischief they sometimes occasion.

If we take a survey of serpents in general, they have marks by which they are distinguished from all the rest of animated nature. They have the length and the suppleness of the eel, but want fins to swim with: they have the scaly covering and pointed tail of the lizard, but they want legs to walk with: they have the crawling motion of the worm, but, unlike that animal, they have lungs to breathe with: like all the reptile kind, they are resentful when offended; and nature has supplied them with terrible arms to revenge every injury.

Though they are possessed of very different degrees of malignity, yet they are all formidable to man, and have a strong similitude of form to each other; and it will be proper to mark the general characters before we descend to particulars. With respect to their conformation, all serpents have a very wide mouth, in proportion to the size of the head; and, what is very extraordinary, they can gape and swallow the head of another animal which is three times as big as their own. A toad was taken out of the belly of a snake, at Lord Spencer's, near London, the body of which was thrice the diameter of the animal that swallowed it. However, it is in no way surprising that the skin of the snake should stretch to receive so large a morsel; the wonder seems how the jaws could take it in. To explain this, it must be observed that the jaws of this animal do not open as ours, in the manner of a pair of hinges, where bones are applied to bones, and play upon one another; on the contrary, the serpent's jaws are held together at the roots by a stretching muscular skin; by which means they open as widely as the animal chooses to stretch them, and admit of a prey much thicker than the snake's own body. The throat, like stretching leather, dilates to admit the morsel; the stomach receives it in part, and the

rest remains in the gullet, till putrefaction and the juices of the serpent's body unite to dissolve it. The teeth in all are crooked and hollow ; and, by a peculiar contrivance, are capable of being erected or depressed at pleasure.

The eyes of all serpents are small, if compared to the length of the body ; and though differently colored in different kinds, yet the appearance of all is malign and heavy ; and from their known qualities, they strike the imagination with the idea of a creature meditating mischief. In some, the upper eye-lid is wanting, and the serpent winks only with that below ; in others, the animal has a nictitating membrane or skin, resembling that which is found in birds, which keeps the eye clean, and preserves the sight. The substance of the eye in all is hard and horny ; the crystalline humor occupying a great part of the globe.

The holes for hearing are very visible in all ; but there are no conduits for smelling, though it is probable that some of them enjoy that sense in tolerable perfection.

The tongue in all these animals is long and forky. It is composed of two long fleshy substances, which terminate in sharp points, and are very pliable. At the root it is connected very strongly to the neck by two tendons, that give it a variety of play. Some of the viper kind have tongues a fifth part of the length of their bodies ; they are continually darting them out, but they are entirely harmless, and only terrify those who are ignorant of the real situation of their poison.

If from the jaws we go on to the gullet, we shall find it very wide for the animal's size, and capable of being distended to a great degree ; at the bottom of this lies the stomach, which is not so capacious, and receives only a part of the prey, while the rest continues in the gullet for digestion.—When the substance in the stomach is dissolved into chyle, it passes into the intestines, and from thence goes to nourishment, or to be excluded by the vent.

Like most other animals, serpents are furnished with lungs, which are serviceable in breathing, though we cannot perceive the manner in which this operation is performed ; for

though serpents are often seen apparently to draw in their breath, yet we cannot find the smallest signs of their ever respiring it again. Their lungs, however, are long and large, and doubtless are necessary to promote their languid circulation. The heart is formed as in the tortoise, the frog, and the lizard kinds, so as to work without the assistance of the lungs. It is single, the greatest part of the blood flowing from the great vein to the great artery by the shortest course. By this contrivance of nature we easily gather two consequences—that snakes are amphibious, being equally capable of living on land and in the water ; and, that also they are torpid in winter, like the bat, the lizard, and other animals formed in the same manner.

As the body of this animal is long, slender, and capable of bending in every direction, the number of joints in the back-bone are numerous beyond what one would imagine. In the generality of quadrupeds, they amount to not above thirty or forty ; in the serpent kind they amount to a hundred and forty-five from the head to the vent, and twenty-five more from that to the tail. The number of these joints must give the back-bone a surprising degree of pliancy ; but this is still increased by the manner in which each of these joints are locked into each other. In man and quadrupeds, the flat surfaces of the bones are laid one against the other, and bound tight by sinews ; but in serpents, the bones play one within the other, like ball and socket, so that they have full motion upon each other in every direction. Thus, if a man were to form a machine composed of so many joints as are found in the back of a serpent, he would find it no easy matter to give it such strength and pliancy at the same time. The chain of a watch is but a bungling piece of workmanship in comparison. Though the number of joints in the back-bone is great, yet that of the ribs is still greater ; for, from the head to the vent, there are two ribs to every joint, which makes their number two hundred and ninety in all. These ribs are furnished with muscles, four in number ; which being inserted into the head, run along to the end of the tail, and

give the animal great strength and agility in all its motions. —The skin also contributes to its motions, being composed of a number of scales, united to each other by a transparent membrane, which grows harder as it grows older, until the animal changes, which is generally done twice a year. This cover then bursts near the head, and the serpent creeps from it, by an undulatory motion, in a new skin, much more vivid than the former. If the old slough be then viewed, every scale will be distinctly seen, like a piece of net-work, and will be found greatest where the part of the body they covered was largest.

There is much geometrical neatness in the disposal of the serpent's scales, for assisting the animal's sinuous motion.—As the edges of the foremost scales lie over the ends of their following scales, so those edges, when the scales are erected, which the animal has a power of doing in a small degree, catch in the ground, and so promote and facilitate the animal's progressive motion. The erecting these scales is by means of a multitude of distinct muscles, with which each is supplied, and one end of which is tacked each to the middle of the foregoing.

When we come to compare serpents with each other, the first great distinction appears in their size ; no other tribe of animals differing so widely in this particular.

Leguat assures us, that he saw one in Java, that was fifty feet long. Carli mentions their growing to above forty feet ; and we have now the skin of one in the museum, that measures thirty-two. Mr. Wentworth, who had large concerns in the Berbices in America, assures me, that, in that country, they grow to an enormous length. He one day sent out a soldier, with an Indian, to kill wild fowl for the table ; and they accordingly went some miles from the fort ; in pursuing their game, the Indian, who generally marched before, beginning to tire, went to rest himself upon the fallen trunk of a tree, as he supposed it to be ; but when he was just going to sit down, the enormous monster began to move, and the poor savage perceiving that he had approached a Liboya, the

greatest of all the serpent kind, dropped down in an agony. The soldier who perceived at some distance what had happened, levelled at the serpent's head, and, by a lucky aim, shot it dead: however, he continued his fire until he was assured that the animal was killed; and then going up to rescue his companion, who was fallen motionless by his side, he, to his astonishment, found him dead likewise, being killed by the fright. Upon his return to the fort, and telling what had happened, Mr. Wentworth ordered the animal to be brought up, when it was measured, and found to be thirty-six feet long. He had the skin stuffed, and then sent to Europe, as a present to the Prince of Orange, in whose cabinet it is now to be seen at the Hague; but the skin has shrunk, by drying, two or three feet.

In the East Indies they grow also to an enormous size; particularly in the island of Java, where, we are assured, that one of them will destroy and devour a buffalo. In a letter, printed in the German Ephemerides, we have an account of a combat between an enormous serpent and a buffalo, by a person who assures us that he was himself a spectator. The serpent had for some time been waiting near the brink of a pool, in expectation of its prey, when a buffalo was the first that offered. Having darted upon the affrighted animal, it instantly began to wrap it round with its voluminous twistings; and at every twist the bones of the buffalo were heard to crack almost as loud as the report of a cannon. It was in vain that the poor animal struggled and bellowed; its enormous enemy entwined it too closely to get free; till at length, all its bones being mashed to pieces, like those of a malefactor on the wheel, and the whole body reduced to one uniform mass, the serpent untwined its folds to swallow its prey at leisure. To prepare for this, and in order to make the body slip down the throat more glibly, it was seen to lick the whole body over, and thus cover it with its mucus. It then began to swallow it at that end that offered least resistance; while its length of body was dilated to receive its prey, and thus took in at once a morsel that was three times its own thick-

ness. We are assured by travellers, that these animals are often found with the body of a stag in their gullet, while the horns, which they are unable to swallow, keep sticking out at their mouths.

But it is happy for mankind that the rapacity of these frightful creatures is often their punishment; for whenever any of the serpent kind have gorged themselves in this manner, whenever their body is seen particularly distended with food, they then become torpid, and may be approached and destroyed with safety. Patient of hunger to a surprising degree, whenever they seize and swallow their prey, they seem, like surfeited gluttons, unwieldy, stupid, helpless, and sleepy: they at that time seek some retreat, where they may lurk for several days together, and digest their meal in safety: the smallest effort at that time is capable of destroying them; they can scarcely make any resistance; and they are equally unqualified for flight or opposition: that is the happy opportunity of attacking them with success: at that time the naked Indian himself does not fear to assail them. But it is otherwise when this sleepy interval of indigestion is over; they then issue, with famished appetites, from their retreats, and with accumulated terrors, while every animal of the forest flies before them.

Carli describes the Long Serpent of Congo, making its track through the tall grass, like mowers in a summer's day. He could not without terror behold whole lines of grass lying levelled under the sweep of its tail. In this manner it moved forward with great rapidity, until it found a proper situation frequented by its prey; there it continued to lurk, in patient expectation, and would have remained for weeks together, had it not been disturbed by the natives.

Other creatures have a choice in their provision; but the serpent indiscriminately preys upon all, the buffalo, the tiger, and the gazelle. One would think that the porcupine's quills might be sufficient to protect it; but whatever has life, serves to appease the hunger of these devouring creatures: porcupines, with all their quills, have frequently been found

in their stomachs, when killed and opened ; nay, they most frequently are seen to devour each other.

A life of savage hostility in the forest, offers the imagination one of the most tremendous pictures in nature. In those burning countries, where the sun dries up every brook for hundreds of miles round ; when what had the appearance of a great river in the rainy season, becomes, in summer, one dreary bed of sand—in those countries, I say, a lake that is never dry, or a brook that is perennial, is considered by every animal as the greatest convenience of nature. As to food, the luxuriant landscape supplies that in sufficient abundance ; it is the want of water that all animals endeavor to remove ; and inwardly parched by the heat of the climate, traverse whole deserts to find out a spring. When they have discovered this, no dangers can deter them from attempting to slake their thirst. Thus, the neighborhood of a rivulet, in the heart of the tropical continents, is generally the place where all the hostile tribes of nature draw up for the engagement. On the banks of this little envied spot, thousands of animals of various kinds are seen venturing to quench their thirst, or preparing to seize their prey. The elephants are perceived, in a long line, marching from the darker parts of the forest ; the buffaloes are there, depending upon numbers for security ; the gazelles, relying solely upon their swiftness ; the lion and tiger, waiting a proper opportunity to seize ; but chiefly the larger serpents are upon guard there, and defend the accesses of the lake. Not an hour passes without some dreadful combat ; but the serpent, defended by its scales, and naturally capable of sustaining a multitude of wounds, is, of all others, the most formidable. It is the most wakeful also ; for the whole tribe sleep with their eyes open, and are, consequently, for ever upon the watch ; so that, till their rapacity is satisfied, few other animals will venture to approach their station.

But though these animals are, of all others, the most voracious, and though the morsel which they swallow, without chewing, is greater than what any other creature, either by land or water, the whale itself not excepted, can devour, yet

no animals upon earth bear abstinence so long as they. A single meal, with many of the snake kind, seems to be the adventure of a season; it is an occurrence for which they have been for weeks, nay, sometimes for months, in patient expectation of. When they have seized their prey, their industry for several weeks is entirely discontinued; the fortunate capture of an hour; often satisfies them for the remaining period of their annual activity. As their blood is colder than that of most other terrestrial animals, and as it circulates but slowly through their bodies, so their powers of digestion are but feeble. Their prey continues, for a long time, partly in the stomach, partly in the gullet, and a part is often seen hanging out of the mouth. In this manner, it digests by degrees; and in proportion as the part below is dissolved, the part above is taken in. It is not, therefore, till this tedious operation is entirely performed, that the serpent renews its appetite and its activity. But should any accident prevent it from issuing once more from its cell, it still can continue to bear famine for weeks, months, nay, for years together.—Vipers are often kept in boxes for six or eight months, without any food whatever; and there are little serpents sometimes sent from Grand Cairo, that live for several years in glasses, and never eat at all, nor even stain the glass with their excrements. Thus the serpent tribe unite in themselves two very opposite qualities: wonderful abstinence, and yet incredible rapacity.

If, leaving the consideration of their appetites, we come to compare serpents as to their voices, some are found silent, some have a peculiar cry; but hissing is the sound which they most commonly send forth, either as a call to their kind, or as a threat to their enemies. In the countries where they abound, they are generally silent in the middle of the day, when they are obliged to retire from the heat of the climate; but as the cool of the evening approaches, they are then heard issuing from their cells, with continued hissings; and such is the variety of their notes, that some have assured me they very much resemble the music of an English grove. This

some will hardly credit—at any rate, such notes, however pleasing, can give but very little delight, when we call to mind the malignity of the minstrel. If considered, indeed, as they answer the animal's own occasions, they will be found well adapted to its nature, and fully answering the purposes of terrifying such as would venture to offend it.

Though all serpents are amphibious, some are much fonder of the water than others; and, though destitute of fins or gills, remain at the bottom, or swim along the surface with great ease. From their internal structure, just sketched above, we see how well adapted they are for either element; and how capable their blood is of circulating at the bottom, as freely as in the frog or the tortoise. They can, however, endure to live in fresh water only; for salt is an effectual bane to the whole tribe. The greatest serpents are most usually found in fresh water, either choosing it as their favorite element, or finding their prey in such places in the greatest abundance. But that all will live and swim in liquids, appears from the experiment of Rhedi, who put a serpent into a large glass vessel of wine, where it lived swimming about six hours; though, when it was by force immersed and kept under that liquid, it lived only one hour and a half. He put another in common water, where it lived three days; but when it was kept under water, it lived only about twelve hours. Their motion there, however, is perfectly the reverse of what it is upon land; for, in order to support themselves upon an element lighter than their bodies, they are obliged to increase their surface in a very artificial manner. On earth their windings are perpendicular to the surface; in water they are parallel to it.

The last distinction that we shall mention, but the most material among serpents, is, that some are venomous, and some inoffensive. If we consider the poison of serpents as it relates to man, there is no doubt but that it is a scourge and an affliction. The various calamities that the poison of serpents is capable of producing, are not only inflicted by the animal itself, but by men, more mischievous than even ser-

pents, who prepare their venom to destroy each other. With this the savages poison their arms, and also prepare their revengeful potions. The ancients were known to preserve it for the purposes of suicide ; and even among semi-barbarous countries at this day, the venom of snakes is used as a philter.

But, though the poison be justly terrible to us, it has been given to very good purposes for the animal's own proper support and defence. Without this, serpents, of all other animals, would be the most exposed and defenceless : without feet for escaping a pursuit, without teeth capable of inflicting a dangerous wound, or without strength for resistance ; incapable, from their size, of finding security in very small retreats, like the earth-worm, and disgusting all from their deformity, nothing was left for them but a speedy extirpation. But furnished as they are with powerful poison, every rank of animals approach them with dread, and never seize them but at an advantage. Nor is this all the advantage they derive from it. The malignity of a few serves for the protection of all. Though not above a tenth of their number are actually venomous, yet the similitude they all bear to each other excites a general terror of the whole tribe ; and the uncertainty of their enemies in which the poison chiefly resides, makes even the most harmless formidable. Thus Providence seems to have acted with double precaution ; it has given some of them poison for the general defence of a tribe naturally feeble ; but it has thinned the numbers of those which are venomous, lest they should become too powerful for the rest of animated nature.

From these noxious qualities in the serpent kind, it is no wonder that not only man, but beasts and birds carry on an unceasing war against them. The ichneumon of the Indians, and the peccary of America, destroy them in great numbers. These animals have the art of seizing them near the head ; and it is said that they can skin them with great dexterity. The vulture and the eagle also prey upon them in great abundance ; and often sousing down from the clouds, drop upon a long serpent, which they snatch up, struggling and

writhing in the air. Dogs also are bred up to oppose them. Father Feuillée tells us, that being in the woods of Martinico, he was attacked by a large serpent, which he could not easily avoid, when his dog immediately came to his relief, and seized the assailant with great courage. The serpent entwined him, and pressed him so violently, that the blood came out of his mouth, and yet the dog never ceased till he had tore it to pieces. The dog was not sensible of his wounds during the fight; but soon after his head swelled prodigiously, and he lay on the ground as dead. But his master having found hard by a banana tree, he applied its juice, mixed with treacle to the wounds, which recovered the dog, and quickly healed his sores.

But it is in man that these venomous creatures find the most dangerous enemy. The *Psylli* of old were famous for charming and destroying serpents. Some moderns pretend to the same art. Cassaubon says, that he knew a man who could at any time summon a hundred serpents together, and draw them into the fire. Upon a certain occasion, when one of them bigger than the rest would not be brought in, he only repeated his charm, and it came forward, like the rest, to submit to the flames. Philostratus describes particularly how the Indians charm serpents. "They take a scarlet robe, embroidered with golden letters, and spread it before a serpent's hole. The golden letters have a fascinating power; and by looking steadfastly, the serpent's eyes are overcome and laid asleep." These, and many other feats, have been often practiced upon these animals by artful men, who had first prepared the serpents for their exercise, and then exhibited them as adventitiously assembled at their call. In India there is nothing so common as dancing serpents, which are carried about in a broad flat vessel, somewhat resembling a sieve. These erect and put themselves in motion at the word of command. When their keeper sings a slow tune, they seem by their heads to keep time; when he sings a quicker measure, they appear to move brisk and lively. All animals have a certain degree of docility; and we find that

serpents themselves can be brought to move and approach at the voice of their master. From this trick, successfully practiced before the ignorant, it is most probable has arisen all the boasted pretensions which some have made to charming of serpents; an art to which the native Americans pretend at this very day. One of Linnæus's pupils, we are told, purchased the secret from an Indian, and then discovered it to his master; but, like all secrets of the kind, it is probable this ended in a few unmeaning words of no efficacy.

From this general picture of the serpent tribe, one great distinction obviously presents itself: namely, into those that are venomous, and those that are wholly destitute of poison. To the first belong the viper, the rattlesnake, the cobra di capello, and all their affinities: to the other, the common black snake, the liboya, the boiguacu, the amphisbæna, and various others, that, though destitute of venom, do not cease to be formidable.

We will give in some future Number of this work the history of each class separately.





Peacocks.

THE PEACOCK.

PLATE XXVII.

Class—Aves. *Order IV.*—Gallinacea : resembling the hen.

—*Genus*—Pavo.

THE Peacock, by the common people of Italy, is said to have the plumage of an angel, the voice of the devil, and the guts of a thief. In fact, each of these qualities mark pretty well the nature of this extraordinary bird. When it appears with its tail expanded, there is none of the feathered creation can vie with it for beauty ; yet the horrid scream of its voice serves to abate the pleasure we find from viewing it ; and still more, its insatiable gluttony, and spirit of depredation, make it one of the most noxious domestics that man has taken under his protection.

Our first Peacocks were brought from the East Indies ; and we are assured, that they are still found in vast flocks, in a wild state, in the Islands of Java and Ceylon. So beautiful a bird, and one esteemed such a delicacy at the tables of the luxurious, could not be permitted to continue long at liberty in its distant retreats. So early as the days of Solomon, we find in his navies, among the articles imported from the east, apes and peacocks. *Ælian* relates, that they were brought into Greece from some barbarous country, and were held in such high esteem among them, that a male and female were valued at about thirty pounds of our money. We are told also, that when Alexander was in India, he found them flying wild, in vast numbers, on the banks of the river Hyarotis, and was so struck with their beauty, that he laid a severe fine and punishment on all who should kill or disturb them. Nor are we to be surprised at this, as the Greeks were so much struck with the beauty of this bird, when first brought among them, that every person paid a fixed price for seeing it ; and several people came from Athens, from Lacedæmon and Thessaly, purely to satisfy their curiosity.

It was probably first introduced into the West, merely on account of its beauty ; but mankind, from contemplating its figure, soon came to think of serving it up for a different entertainment. Aufidius Hurco stands charged by Pliny with being the first who fattened up the Peacock for the feast of the luxurious. Whatever there may be of delicacy in the flesh of a young Peacock, it is certain an old one is very indifferent eating ; nevertheless, there is no mention made of choosing the youngest ; it is probable they were killed indiscriminately, the beauty of the feathers in some measure stimulating the appetite. Hortensius, the orator, was the first who served them up at an entertainment at Rome ; and from that time they were considered as one of the greatest ornaments of every feast. Whether the Roman method of cookery, which was much higher than ours, might not have rendered them more palatable than we find them at present, we cannot tell ; but certain it is, they talk of the Peacock as being the first of viands.

Its fame for delicacy, however, did not continue very long ; for we find in the times of Francis I., that it was a custom to serve up Peacocks to the tables of the great, with an intention not to be eaten, but only to be seen. Their manner was to strip off the skin ; and then preparing the body with the warmest spices, they covered it up again in its former skin ; with all its plumage in full display, and no way injured by the preparation. The bird thus prepared, was often preserved for many years without corrupting ; and it is asserted of the Peacock's flesh, that it keeps longer unputrefied than that of any other animal. To give a higher zest to these entertainments, on weddings particularly, they filled the bird's beak and throat with cotton and camphene, which they set on fire, to amuse and delight the company.

Like other birds of the poultry kind, the Peacock feeds upon corn, but its chief predilection is for barley. But as it is a very proud and fickle bird, there is scarcely any food that it will not at times covet and pursue. Insects and tender plants are often eagerly sought at a time that it has a sufficiency of its natural food provided more nearly. In the indul-

gence of these capricious pursuits, walls cannot easily confine it; it strips the tops of houses of their tiles or thatch, it lays waste the labors of the gardener, roots up his choicest seeds, and nips his favorite flowers in the bud. Thus its beauty but ill recompenses for the mischief it occasions; and many of the more homely looking fowls are very deservedly preferred before it.

Nor is the Peacock less a debauchee in its affections, than a glutton in its appetites. He is still more salacious than even the cock; and though not possessed of the same vigor, yet burns with more immoderate desire. He requires five females at least to attend him; for this reason, the pea-hen endeavors, as much as she can, to hide her nest from the male, as he would otherwise disturb her sitting, and break her eggs.

The pea-hen seldom lays above five or six eggs in this climate before she sits. Aristotle describes her as laying twelve; and, it is probable, in her native climate, she may be thus prolific; for it is certain, that in the forests where they breed naturally, they are numerous beyond expression. This bird lives about twenty years; and not till its third year has it that beautiful variegated plumage that adorns its tail.

"In the kingdom of Cambaya," says Taverner, "near the city of Baroch, whole flocks of them are seen in the fields.—They are very shy, however, and it is impossible to come near them. They run off swifter than the partridge; and hide themselves in the thickets, where it is impossible to find them. They perch by night upon trees; and the fowler often approaches them at that season with a kind of banner, on which a Peacock is painted to the life on either side. A lighted torch is fixed on the top of this decoy; and the Peacock, when disturbed, flies to what it takes for another, and is thus caught in a noose, prepared for that purpose."

There are varieties of this bird, some of which are white, others crested: that which is called the *Peacock of Thibet*, is the most beautiful of the feathered creation, containing in its plumage all the most vivid colors, red, blue, yellow, and green, disposed in an almost artificial order, as if merely to please the eye of the beholder.

THE RUFF AND REEVE.

PLATE XXVIII.

Class—Aves. *Order* V.—Gralliatuæ, waders. *Genus*—*Tringa pugnax*.—*Lin.*

THE periodical changes which the plumage of the feathered race undergoes have long excited the attention of naturalists. To a great extent these changes are connected with atmospheric temperature. The severities of winter demand a warmer, a fuller, and often a differently colored garment, in order that the vital heat of the system may be duly preserved. The autumnal change of coloring (where such occurs) is from variegated, or bright and rich tints, to dusky, or pure white; the spring change restores these tints again. But besides the changes here alluded to, and which have a special reference to the preservation of the temperature of the body in winter, and secondarily to concealment—changes which are exemplified most fully in the ptarmigan and other allied species—there is another change of dress, if change it can be called, peculiar to many birds, which consists in the assumption of ornamental plumes in the males on the approach of spring. Among the species peculiar to the hotter climates of the globe, this arrangement predominates to a very great extent; but it is also remarkable in some species indigenous in our latitudes, and eminently so in the bird now before us (*Machetes pugnax*, Cuv.), of which the male, in consequence of the ornamental plumes on the neck during the breeding season is termed the ruff, while the female, to whose attire no such addition is made, is termed the reeve.

The ruff (applying the term, for convenience sake, as is usually done, to both sexes), belongs to the order *Grallatores*, and is one of our summer birds of passage, leaving our latitudes on the setting in of the cold months of winter. A few stragglers, however, occasionally remain with us during the

PLATE
XXXV



Wm. H. & Co.

242

whole of the winter season ; and on one of the severest days of December last, an individual was shot on the banks of the Thames, near Hampton, by Mr. Gould, the author of the "Birds of Europe" and other works on ornithology. This is certainly a very remarkable instance ; indeed, we are not aware of another on record. The individual in question was a male, in its plain or winter livery.

It is seldom before the middle of April that the ruff visits our land and the parallel latitudes of the adjacent country, on its return from its winter quarters in the sunny districts of the south ; and it is still later before it reaches more northern regions, for it extends its vernal migration even as far as the bleak shores of Iceland. Its favorite haunts and breeding places are extensive fenny districts or marshes, where it can enjoy undisturbed seclusion, and procure food in due abundance. In England, the fens of Lincolnshire and Cambridge are its principal resort, but it occurs also in various other places of a similar character. In Holland, it is very abundant. It would appear that the males are the first to arrive at their destined station ; at all events, they keep themselves in distant bands, separate from the females. As the breeding time draws near, beautiful long plumes round the neck, forming a ruff, and large full-ear tufts, rapidly develope. The males now begin to *hill*, as it is termed—that is, they seek some spot a little elevated above the surrounding marsh, to which, as to a common centre, numbers are gradually drawn. Here each individual selects its own station or little territory, for the possession of which it strenuously contends ; the attempt of a rival to encroach upon the circle is immediately followed by a hard-fought battle, the territory being ceded by the vanquished to the victor. These battles and contests are almost incessant, at least during the day ; for at night they all return to the marsh in order to feed, (in this respect their habits being nocturnal), but in the morning each resumes its station, and the contests are again carried on. Here, full of animosity against each other, and jealous of each other's rights, they await the arrival of the females. The arrival on the hill of

one of the other sex is the signal to a general contest. The scene is now one of perpetual warfare, female after female arriving at the hill, so that "the theatre of these battles," as Selby observes, "soon becomes bare of grass from the constant traversing of the combatants." Not only have the neck and ear plumes now attained their perfection, but the face of the male becomes covered with small yellowish papillæ, or fleshy excrescences, instead of the short feathers with which it is ordinarily clothed. During the whole of May and the early part of June, this scene of warfare continues with unabated energy. The manner in which the ruff fights has much resemblance to that of the game cock; the head is lowered, the plumes are thrown up into a disc, the tail is expanded, and each adversary attempts to seize the other with his bill, following up his advantage by a blow with the wing. The legs are too feeble to strike with, and they are not armed, as in the fowl; the contest, therefore, is seldom fatal, the vanquished being rather wearied out and dispirited by the superior strength and determination of his antagonist than seriously injured. Towards the latter part of June this combativeness abates, the papillæ on the face disappear, and shortly afterwards the fine plumes are moulted off, their place being supplied by ordinary feathers.

The females, or reeves, which, as we have intimated, only visit the hill at intervals, breed among the swamps. The nest consists of little more than a slight depression among a tuft of grass or rushes, or other herbage which luxuriates in such situations. The eggs are four in number, and closely resemble those of the snipe, only being somewhat larger. In the group of grallatorial birds, to which the present species belongs, the females usually exceed the males in size; here, however, the females are much smaller than the males, and moreover undergo no corresponding changes of plumage.—With respect to the beautiful plumes which for a season ornament the ruff, one circumstance is remarkable; we allude to the diversity of their coloring. In no two examples is the color precisely alike. We have seen them pure white;

white elegantly barred with black ; reddish brown intermixed with black, or barred and spotted ; pure glossy black ; grey and black, &c. It appears, moreover, that in no individual are these colors the same for any two seasons.

There are several points in which this singular species evidences an analogy to the true gallinaceous groups of the Rasorial order. Agreeing in food and general habits with the tringæ and snipes, it differs from them in being decidedly polygamous, the females courting the society of the males, as is the case with the wild turkey and some others of the order *rasores*. The temporary plumes of the neck, resembling the hackled feathers of the cock, the development of fleshy excrescences about the face, the pugnacious habits, the jealousy of encroachment upon a preoccupied territory, put us in mind of the common fowl, and (with the exception of the hackles) of the pheasant, capercailzie, and black grouse.

The ruff is among the list of birds whose flesh is accounted as a delicacy for the table ; indeed, it is held in high esteem, and the birds, therefore, always fetch a good price in the market. Considerable profit is made by various fowlers in the fens of Lincolnshire, who devote themselves at certain seasons of the year to the business of catching them and feeding them for sale. The means employed for taking them are chiefly clapnets, into which they are lured by various devices, one of which is a stuffed bird of their own species. The seasons for taking them are, first, April and May, when the males are hilling, and pugnacious in the extreme ; and secondly, September, after the young are fully fledged and ready for the autumnal migration, when they with the old birds pass to more southern latitudes. Few birds seem so indifferent and contented in captivity—a circumstance fortunate for the fowler, whose object is to fatten them for the market.—Their natural food consists of worms, small insects, &c., with which the soft ooze or mud of the marsh abounds ; but they are easily reconciled to a change of diet, and feed eagerly upon bread and milk, boiled wheat, and other articles of a farinaceous quality, upon which they thrive and become plump.

Captivity, which subdues the spirit of most wild creatures, strange to say, does not abate the pugnacity of the full-plumed males taken in the spring. Not only will the appearance of a reeve excite them to strife, but a bowl of food set before them will produce the same effect, and lead to a tumultuous conflict, which, as the arena is very limited, and the weaker have no chance of escape, is sometimes known to result in fatal consequences.

Of the variable color of the neck and ear plumes we have already spoken. The rest of the coloring may be thus described. The upper parts of the body are varied with a mixture of brown, pale yellow, and black; the sides of the chest and flanks are barred with black on a pale yellow ground.—The under surface is white. In some individuals these tints are much darker than in others.

The reeve in summer has the upper surface varied with glossy black on a cinereous grey ground; in winter the color becomes mote uniform, losing the markings of black. The young of the year have the sides of the neck and chest and the region round the eye of a yellowish brown, with a tinge of orange, and the back is dark brown, glossed with purple, each feather having a deep margin of pale yellowish brown. In this stage it has been mistaken for a distinct species.

A collection of 15 small, stylized illustrations of various insects, including beetles, flies, and bees, arranged in a grid-like pattern. The illustrations are simple line drawings with some shading, showing different species of insects in various poses.



SEA LION.

PLATE XXX.

Class—Mammalia. *Order*—Amphibia Carnivora. *Genus*
—Phœa Jubata.

ACCORDING to Steller, the length of the full-grown Sea-Lion of the North is about fifteen feet, and its weight about sixteen hundred. The males have stiff and crisp curled hair about the neck, of which the females and young are destitute. The females are shorter and more slender than the males. The hide is very thick, and covered with coarse strong hair of a reddish color like that of many cows, which gets paler in the aged, and is of a deeper hue in the young; in the females it has a bright ochre tint, and is sometimes of a chesnut color in the young. The head is large; the nose stretched out, and somewhat turned upwards; the eyes are very large, having the inner angle stained, as it were, with cinnabar from the size of the caruncle; the bright pupil sparkles of a green color, and the rest of the eye is white like ivory; the eye-brows are bushy; the external ears conical, upright, large, and distinct. That which especially, in addition to the color and size of the animal, entitles it to the name of Sea-Lion, is its mane of erect and undulating hair, which augments its apparent size, and greatly increases its beauty of form, like that which is seen in the king of beasts.

This Sea-Lion inhabits the eastern shores of Kamskatka and the Kurile Islands, and as far as Matsmai, where Capt. Spunberg observed a certain island of the most picturesque form, bordered with rocks resembling buildings, and swarming with these creatures, to which he gave the name of the Palace of Sea-Lions. They abound in Behring's Island in the autumn, whither they resort for the bringing forth of their young. Steller also saw them in abundance on the

coasts of America in July. They are not so migratory as some other species, but still have their summer and winter quarters. They live chiefly on rocky shores, and desert rocks of the ocean, on which they climb, and their roaring is said to be useful in the foggy weather of those regions, by warning navigators to avoid destruction.

Though the males have a terrible aspect, yet they take flight on the first appearance of man ; and if surprised in their sleep, they are panic-struck, sighing deeply, and in their attempt to escape, get quite confused, tumble down, and tremble so much, that they are scarcely able to move their limbs. If, however, reduced to extremity, they grow desperate, turn on their enemy with great fury and noise, and put even the most valiant to flight. On this account the Kam-skatkas never attack them in the open sea, nor without many precautions on land. They usually watch their opportunity to find one asleep, when the most courageous amongst them strikes their harpoon into the creature, and takes to his heels as fast as he can ; his comrades then fasten the line attached to the harpoon to a strong stake, and its flight thus arrested, they shoot at it with arrows, and dart their lances, until being nearly overcome, they venture in and despatch it with their clubs. They often also employ poisoned arrows with effect. It is at the same time true that many of the natives of those regions, from the great size and power of these animals, attach a kind of glory to the destruction of a Sea-Lion, and that some of them will hunt it, at great peril to themselves, for many successive days, by sea and land, without any other compass than the starry heaven.

Though these animals are naturally savage and brutal, yet in the long-run they become familiar with man. Thus Steller tells us that he lived for six days in a hovel in the very midst of them, and they soon became intimate. They observed what he was doing with great calmness, laid themselves down close beside him, and would suffer him to seize their cubs. He had thus an excellent opportunity of studying their habits, and once saw one which had been robbed of

its mate fight with the whole herd for three days, and escape at last with more than a hundred wounds. They allowed the whelps of other Seals to sport near them without offering them the least injury. The old showed but little affection for their young ones, and sometimes, through mere carelessness, would tread them to death ; they also suffered them to be killed before their eyes without any concern or resentment. The cubs, too, on land are not sportive like those of some other species, but are almost always asleep. They are taken to sea when somewhat advanced : when wearied they mount on their mother's back, whence the male often pushes them to accustom them to the exercise. The males treat the females with great respect, and often caress them. They are polygamous, but usually satisfy themselves with from two to four females a piece.

The Sea-Lion has not so much fore-paws as fins proceeding from the sides of the chest ; they are smooth, of a black color, without any appéarance of fingers, with a mere trace of nails ; they have the shape of roundish tubercles, and are of a horny consistency ; they are situated at about one-third from the extremity of the paw, the whole form of which is that of an elongated triangle truncated at its point ; it is quite devoid of hair, and deeply striped on its under surface. The posterior extremities are not very unlike the anterior ; they have the same black skin underneath, and clearly include five very long and flat toes, which are terminated by thin compressed membranes which extend beyond their extremities ; the small nails, which are placed at the end of the proper fingers, are of no more important use than to enable the animal to scratch itself.

The illustrious Cook himself states, that the largest of these animals he met with were not more than twelve or fourteen feet in length, and perhaps eight or ten in circumference : the female is not half so long, and is covered with short hair of an ash color. He adds—"It is not at all dangerous to go among them, for they either fled or lay still.—The only danger was in going between them and the sea ;

for if they took fright at any thing, they would come down in such numbers, that if you could not get out of their way, you would be run over. When we came suddenly upon them, or waked them out of their sleep, (for they are sluggish, sleepy animals,) they would raise up their heads, snort and snarl, and look fierce, as if they meant to devour us ; but as we advanced upon them, they always ran away, so that they are downright bullies."

Forster remarks, that the "rocks along the shore, in New-Year's Harbor, were covered with multitudes of these Seals, which, from their manes, well deserved the name of Sea-Lions. We put into a little cove under the shelter of some rocks, and attacked some of these fierce animals, most of which immediately threw themselves into the sea. Some of the most unwieldy, however, kept their ground, and were killed by our men. The noise which all the animals of this kind made was various, and sometimes stunned our ears.—The old males snort and roar like mad bulls or lions ; the females bleat exactly like calves, and the young cubs like lambs. They live together in numerous herds. The oldest and fattest males lie apart, each having chosen a large rock to which none of the rest dare approach without engaging in furious combat. We have often seen them seize each other with a degree of rage which is not to be described ; and many of them had deep gashes on their backs, which they had received in the wars. The younger active Sea-Lions, with all the females and the cubs, lie together. They commonly waited the approach of our people ; but so soon as some of the herd were killed, the rest took flight with great precipitation, some females taking off a cub in their mouths, whilst many were so terrified that they left them behind. When left to themselves, they were often seen caressing each other in the most tender manner, and their snouts often met together as if they were kissing. They come on shore on these uninhabited spots to breed, and do not feed during their stay on land, which sometimes lasts several weeks ; they then grow lean, and swallow a considerable quantity of stones to

keep their stomach distended. We were surprised to find the stomachs of many of them entirely empty, and those of others filled with ten or twelve round heavy stones, each the size of two fists."

Each of the great herds of these amphibia is composed of an adult male, and a number of females and their young.—The number of females would appear to vary. Cook, in his account, says—"The male is surrounded by from twenty to thirty females, and he is very attentive to keep them all to himself, beating off every male who attempts to come into his flock. Others, again, had a less number, some no more than one or two; and here and there we have seen one lying growling in a retired place alone, and suffering neither males nor females to approach him. We judged that these were old and superannuated." Forster reckons the number of females at ten or twelve, and from fifteen to twenty young ones of both sexes. They swim about all together at sea, and also remain united when they repose on land. According to Forster, the sight or voice of man makes them flee, and throw themselves into the water; for, although they are large and strong, they are also timid; and when a man attacks them even with a good stick, they rarely defend themselves, but retreat precipitately. They never commence an attack, or act on the offensive, so that a person may be in the midst of them without any apprehension.

The females never fight with each other, nor with the males, and seem to live in entire dependence upon the chief of the family; but when two grown males, or rather two heads of families, engage, all the females attend in their train, to witness the contest; and if the chief of another troop interfere with the combatants, either on one side or the other, his example is immediately followed by many other chiefs, and then the combat becomes almost general, and terminates only in a vast effusion of blood, and often even in the death of many of the males, whose females are instantly joined to the family of the victor. It has been remarked, that the very aged males do not interfere in these struggles;

they seem aware of their weakness, and keep at a distance, remaining quiet in their favorite retreat. The lionesses endeavor to make their escape from the thick of the fight.— Their maternal affection does not appear to be so strong as in some of their congeners, although Forster stated in his private memoir to Buffon, that he had sometimes seen them defend their young at the expense of their lives.

Sea-Lions are not more savage, nor more objects of apprehension, than the other species. They are equally heavy and clumsy in their gait, and more frequently endeavor to fly, than to run at those who attack them. They live upon fish, sea-birds, which they catch by surprising them, and herbs. They bring forth their young among the rushes, which grow on the sea-shore, to which they retire for the night, and continue to suckle them till they are strong enough to go out to sea. At sunset they are seen to congregate together, and to land in troops on the shore, and then the cubs call for their dams by cries so like those of lambs, and calves, and kids, that any one might be easily deceived, if he were not aware of their true nature.

It was stated that their flesh was very good, but I, says Pernetty, never tasted it; but I can affirm that their oil is most excellent: it is obtained both by the assistance of heat, and without it, coming away spontaneously when exposed to the sun and air, when it is excellent for culinary purposes.

We shall close these accounts of the Sea-Lions by a short extract from Captain Weddell. "Near the middle of the island of Santa Cruz, on the east coast of Patagonia, is an island which is called Sea-Lion Island, from the number of these animals residing upon it. This amphibious creature is most properly denominated, from its similarity to the quadruped of that name. Its face is not unlike that of the lion, but, in particular, a long mane, and a bold and fierce front, which it presents when standing on its fore flippers, bear a near resemblance to that animal. A full grown Sea-Lion measures eleven feet from the tip of the nose to the extremity of the tail, and eight feet in circumference."

1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 40
 41
 42
 43
 44
 45
 46
 47
 48
 49
 50
 51
 52
 53
 54
 55
 56
 57
 58
 59
 60
 61
 62
 63
 64
 65
 66
 67
 68
 69
 70
 71
 72
 73
 74
 75
 76
 77
 78
 79
 80
 81
 82
 83
 84
 85
 86
 87
 88
 89
 90
 91
 92
 93
 94
 95
 96
 97
 98
 99
 100

Pl. 30.



1. Pangolin, 2. Pangolin.

THE PANGOLIN AND PHATAGIN.

PLATE XXX.

Class—Reptilia. *Order II.*—Sauria. *Genus*—*Manis tetradactyla* and *manis pentadactyla*.

THE Pangolin, which has been usually called the *scaly lizard*, Mr. Buffon very judiciously restores to that denomination by which it is known in the countries where it is found. The calling it a lizard, he justly observes, might be apt to produce error, and occasion its being confounded with an animal which it resembles only in its general form, and in its being covered with scales. The lizard may be considered as a reptile, produced from an egg; the Pangolin is a quadruped, and brought forth alive, and perfectly formed. The lizard is all covered with the marks of scales; the Pangolin has scales neither on the throat, the breast, nor the belly. The scales of the lizard seem stuck upon the body even closer than those of fishes; the scales of the Pangolin are only fixed at one end, and capable of being erected, like those of the porcupine, at the will of the animal. The lizard is a defenceless creature; the Pangolin can roll itself into a ball, like the hedge-hog, and presents the points of its scales to the enemy, which effectually defend it.

The Pangolin, which is a native of the torrid climates of the ancient continent, is, of all other animals, the best protected from external injury by nature. It is about three or four feet long; or, taking in the tail, from six to eight. Like the lizard, it has a small head, a very long nose, a short thick neck, a long body, legs very short, and a tail extremely long, thick at the insertion, and terminating in a point. It has no teeth, but is armed with five toes on each foot, with long white claws. But what it is chiefly distinguished by, is its scaly covering, which, in some measure, hides all the proportions of the body. These scales defend the animal on all

parts, except the under part of the head and neck, under the shoulders, the breast, the belly, and the inner side of the legs ; all which parts are covered with a smooth, soft skin, without hair. * Between the shells of this animal, at all the interstices, are seen hairs like bristles, brown at the extremity, and yellow towards the root. The scales of this extraordinary creature are of different sizes and different forms, and stuck upon the body somewhat like the leaves of an artichoke. The largest are found near the tail, which is covered with them like the rest of the body. These are above three inches broad, and about two inches long, thick in the middle and sharp at the edges, and terminated in a roundish point.— They are extremely hard, and their substance resembles that of horn. They are convexed on the outside, and a little concave on the inner ; one edge sticks in the skin, while the other laps over that immediately behind it. Those that cover the tail, conform to the shape of that part, being of a dusky brown color, and so hard, when the animal has acquired its full growth, as to turn a musket-ball.

Thus armed, this animal fears nothing from the efforts of all other creatures, except man. The instant it perceives the approach of an enemy, it rolls itself up like the hedge-hog, and presents no part but the cutting edges of its scales to the assailant. Its long tail, which, at first view, might be thought easily separable, still serves more to increase the animal's security. This is lapped round the rest of the body, and, being defended with shells even more cutting than any other part, the creature continues in perfect security. Its shells are so large, so thick, and so pointed, that they repel every animal of prey ; they make a coat of armor that wounds while it resists, and at once protects and threatens. The most cruel, the most famished quadruped of the forest, the tiger, the panther, and the hyæna, make vain attempts to force it. They tread upon, they roll it about, but all to no purpose ; the Pangolin remains safe within, while its invader almost always feels the reward of its rashness. The fox often destroys the hedge-hog by pressing it with his weight, and

thus obliges it to put forth its nose, which he instantly seizes, and soon after the whole body ; but the scales of the Pangolin effectually support it under any such weight, while nothing that the strongest animals are capable of doing can compel it to surrender. Man alone seems furnished with arms to conquer its obstinacy. The negroes of Africa, when they find it, beat it to death with clubs, and consider its flesh as a very great delicacy.

But, although this animal be so formidable in its appearance, there cannot be a more harmless, inoffensive creature when unmolested. It is even unqualified by nature to injure larger animals, if it had the disposition, for it has no teeth.—It should seem that the bony matter, which goes in other animals to supply the teeth, is exhausted in this in supplying the scales that go to the covering of its body. However this be, its life seems correspondent to its peculiar conformation. Incapable of being carnivorous, since it has no teeth, nor of subsisting on vegetables which require much chewing, it lives entirely upon insects, for which nature has fitted it in a very extraordinary manner. As it has a long nose, so it may naturally be supposed to have a long tongue ; but, to increase its length still more, it is doubled in the mouth, so that when extended, it is shot out to above a quarter of a yard beyond the tip of the nose. This tongue is round, extremely red, and covered with an unctuous and slimy liquor, which gives it a shining hue. When the Pangolin, therefore, approaches an ant-hill, for these are the insects on which it chiefly feeds, it lies down near it, concealing as much as possible the place of its retreat, and stretching out its long tongue among the ants, keeps it for some time quite immoveable. These little animals, allured by its appearance, and the unctuous substance with which it is smeared, instantly gather upon it in great numbers ; and when the Pangolin supposes a sufficiency, it quickly withdraws the tongue and swallows them at once. This peculiar manner of hunting for its prey is repeated, either till it be satisfied, or till the ants, grown more cautious, will be allured to their destruction no longer. It is against

these noxious insects, therefore, that its only force or cunning is exerted ; and were the negroes but sufficiently sensible of its utility in destroying one of the greatest pests to their country, they would not be so eager to kill it. But it is the nature of savage men to pursue the immediate good, without being solicitous about the more distant benefit they remove. They, therefore, hunt this animal with the utmost avidity for its flesh ; and as it is slow and unable to escape in an open place, they seldom fail of destroying it. However, it chiefly keeps in the most obscure parts of the forest, and digs itself a retreat in the cliffs of rocks, where it brings forth its young, so that it is but rarely met with, and continues a solitary species, and an extraordinary instance of the varying of nature.

Of this animal, there is a variety which is called the PHATAGIN, much less than the former, being not above a foot long from the head to the tail, with shells differently formed, with its belly, breast, and throat covered with hair, instead of a smooth skin, as in the former ; but that by which it is peculiarly distinguished, is the extent of its tail, which is above twice the length of its body. Both are found in the warm latitudes of the east, as well as in Africa ; and, as their numbers are but few, it is to be supposed their fecundity is not great.

[illegible]



THE EAGLE.

PLATE XXXI.

Class—Aves. *Order I.*—Rapaces. *Genus*—Aquila.

THE Golden Eagle is the largest and the noblest of all those birds that have received the name of Eagle. It weighs above twelve pounds. Its length is three feet; the extent of its wings, seven feet four inches; the bill is three inches long, and of a deep blue color; and the eye of a hazel color. The sight and sense of smelling are very acute. The head and neck are clothed with narrow sharp-pointed feathers, and of a deep brown color, bordered with tawny; but those on the crown of the head, in very old birds, turn gray. The whole body, above as well as beneath, is of a dark brown; and the feathers of the back are finely clouded with a deeper shade of the same. The wings, when clothed, reach to the end of the tail. The quill-feathers are of a chocolate color, the shafts white. The tail is of a deep brown, irregularly barred and blotched with an obscure ash-color, and usually white at the roots of the feathers. The legs are yellow, short, and very strong, being three inches in circumference, and feathered to the very feet. The toes are covered with large scales, and armed with the most formidable claws, the middle of which are two inches long.

In the rear of this terrible bird follow the *ring-tailed eagle*, the *common eagle*, the *bald eagle*, the *white eagle*, the *kough-footed eagle*, the *erne*, the *black eagle*, the *osprey*, the *sea eagle*, and the *crowned eagle*. These, and others that might be added, form different shades in this fierce family; but have all the same rapacity, the same general form, the same habits, and the same manner of bringing up their young.

In general, these birds are found in mountainous and ill-peopled countries, and breed among the highest cliffs. They choose those places which are remotest from man, upon

whose possessions they but seldom make their depredations, being contented rather to follow the wild game in the forest, than to risk their safety to satisfy their hunger.

This fierce animal may be considered among birds as the lion among quadrupeds; and in many respects they have a strong similitude to each other. They are both possessed of force, and an empire over their fellows of the forest. Equally magnanimous, they disdain smaller plunder; and only pursue animals worthy the conquest. It is not till after having been long provoked, by the cries of the rook or the magpie, that this generous bird thinks fit to punish them with death: the Eagle also disdains to share the plunder of another bird; and will take up with no other prey but that which he has acquired by his own pursuits. How hungry soever he may be, he never stoops to carrion; and when satiated, he never returns to the same carcass, but leaves it for other animals, more rapacious and less delicate than he. Solitary, like the lion, he keeps the desert to himself alone; it is as extraordinary to see two pair of Eagles in the same mountain, as two lions in the same forest. They keep separate, to find a more ample supply; and consider the quantity of their game as the best proof of their dominion. Nor does the similitude of these animals stop here: they have both sparkling eyes, and nearly of the same color; their claws are of the same form, their breath equally strong, and their cry equally loud and terrifying. Both bred for war, they are enemies of all society: alike fierce, proud, and incapable of being easily tamed. It requires great patience and much art to tame an Eagle; and even though taken young, and brought under by long assiduity, yet still it is a dangerous domestic, and often turns its force against its master. When brought into the field for the purposes of fowling, the falconer is never sure of its attachment: that innate pride, and love of liberty, still prompt it to regain its native solitudes; and the moment the falconer sees it, when let loose, first stoop towards the ground, and then rise perpendicularly into the clouds, he gives up all his former labor for lost; quite sure of never beholding his late prisoner

more. Sometimes, however, they are brought to have an attachment for their feeder ; they are then highly serviceable, and liberally provide for his pleasures and support. When the falconer lets them go from his hand, they play about and hover round him till their game presents, which they see at an immense distance, and pursue with certain destruction.

Of all animals the Eagle flies highest ; and from thence the ancients have given him the epithet of *the bird of heaven*. Of all others also, he has the quickest eye ; but his sense of smelling is far inferior to that of the vulture. He never pursues, therefore, but in sight ; and when he has seized his prey, he stoops from his height, as if to examine its weight, always laying it on the ground before he carries it off. As his wing is very powerful, yet, as he has but little suppleness in the joints of the leg, he finds it difficult to rise when down ; however, if not instantly pursued, he finds no difficulty in carrying off geese and cranes. He also carries away hares, lambs, and kids ; and often destroys fawns and calves, to drink their blood, and carries a part of their flesh to his retreat. Infants themselves, when left unattended, have been destroyed by these rapacious creatures ; which probably gave rise to the fable of Ganymede's being snatched up by an Eagle to heaven.

An instance is recorded in Scotland of two children being carried off by Eagles ; but fortunately they received no hurt by the way ; and, the Eagles being pursued, the children were restored unhurt out of the nests to the affrighted parents.

The Eagle is thus at all times a formidable neighbor ; but peculiarly when bringing up its young. It is then that the female, as well as the male, exert all their force and industry to supply their young. Smith, in his history of Kerry, relates, that a poor man in that country got a comfortable subsistence for his family, during a summer of famine, out of an Eagle's nest, by robbing the eaglets of food, which was plentifully supplied by the old ones. He protracted their assiduity beyond the usual time, by clipping their wings, and retarding the flight of the young ; and very probably also, as I have

known myself, by so tying them as to increase their cries, which is always found to increase the parent's despatch to procure them provision. It was lucky, however, that the old Eagles did not surprise the countryman as he was thus employed, as their resentment might have been dangerous.

It happened some time ago, in the same country, that a peasant resolved to rob the nest of an Eagle, that had built in a small island in the beautiful lake of Killarney. He accordingly stripped, and swam in upon the island while the old ones were away ; and, robbing the nest of its young, he was preparing to swim back, with the eaglets tied in a string ; but while he was yet up to his chin in the water, the old Eagles returned, and, missing their young, quickly fell upon the plunderer, and, in spite of all his resistance, despatched him with their beaks and talons.

In order to extirpate these pernicious birds, there is a law in the Orkney Islands, which entitles any person that kills an Eagle to a hen out of every house in the parish in which the plunderer is killed.

The nest of the Eagle is usually built in the most inaccessible cliff of the rock, and often shielded from the weather by some jutting crag that hangs over it. Sometimes, however, it is wholly exposed to the winds, as well sideways as above ; for the nest is flat, though built with great labor. It is said that the same nest serves the Eagle during life ; and indeed the pains bestowed in forming it seems to argue as much.—One of these Willoughby thus describes : “ It was made of great sticks, resting one end on the edge of a rock, the other on two birch trees. Upon these was a layer of rushes, and over them a layer of heath, and upon the heath rushes again ; upon which lay one young one, and an addle egg ; and by them a lamb, a hare, and three heath-poults. The nest was about two yards square, and had no hollow in it. The young Eagle was of the shape of a goshawk, of almost the weight of a goose, rough footed, or feathered down to the foot, having a white ring about the tail.” Such is the place where the female Eagle deposits her eggs ; which seldom exceed two at

a time in the largest species, and not above three in the smallest. It is said that she hatches them for thirty days; but frequently, even of this small number of eggs, a part is addled: and it is extremely rare to find three eaglets in the same nest. It is asserted, that as soon as the young ones are somewhat grown, the mother kills the most feeble or the most voracious. If this happens, it must proceed only from the necessities of the parent, who is incapable of providing for their support; and is content to sacrifice a part to the welfare of all.

The plumage of the eaglets is not so strongly marked as when they come to be adult. They are at first white; then inclining to yellow; and at last of a light brown. Age, hunger, long captivity, and diseases, make them whiter. It is said, they live above a hundred years; and that they at last die, not of old age, but from the beaks turning inward upon the under mandible, and thus preventing their taking any food. They are equally remarkable, says Mr. Pennant, for their longevity and for their power of sustaining a long abstinence from food.

Those Eagles which are kept tame, are fed with every kind of flesh, whether fresh or corrupting; and when there is a deficiency of that, bread or any other provision will suffice. It is very dangerous approaching them if not quite tame; and they sometimes send forth a loud, piercing, lamentable cry, which renders them still more formidable. The Eagle drinks but seldom; and perhaps, when at liberty, not at all, as the blood of its prey serves to quench its thirst.—The Eagle's excrements are always soft and moist, and tinged with that whitish substance which, as was said before, mixes in birds with the urine.

Such are the general characteristics and habitudes of the Eagle; however, in some these habitudes differ, as the Sea-Eagle and the Osprey live chiefly upon fish, and consequently build their nests on the sea shore, and by the sides of rivers on the ground among reeds; and often lay three or four eggs, rather less than those of a hen, of a white elliptical form.—

They catch their prey, which is chiefly fish, by darting down upon them from above. The Italians compare the violent descent of these birds on their prey to the fall of lead into water ; and call them *aquila piombina*, or the Leaden Eagle.

Nor is the Bald Eagle, which is an inhabitant of North Carolina, less remarkable for habits peculiar to itself. These birds breed in that country all the year round. When the eaglets are just covered with down, and a sort of white woolly feathers, the female Eagle lays again. These eggs are left to be hatched by the warmth of the young ones that continue in the nest ; so that the flight of one brood makes room for the next that are but just hatched. These birds fly very heavily ; so that they cannot overtake their prey, like others of the same denomination. To remedy this, they often attend a sort of fishing-hawk, which they pursue, and strip the plunderer of its prey. This is the more remarkable, as this hawk flies swifter than they. These Eagles also generally attend upon fowlers in the winter ; and when any birds are wounded, they are sure to be seized by the Eagle, though they may fly from the fowler. This bird will often also steal young pigs, and carry them alive to the nest, which is composed of twigs, sticks, and rubbish ; it is large enough to fill the body of a cart, and is commonly full of bones half eaten, and putrid flesh, the stench of which is intolerable.

The following account of the capture of an Eagle may not be uninteresting : On the 29th of November, 1804, an Eagle was shot at Stockfield Park, near Wetherby, by the gamekeeper of the Countess of Aberdeen, in the grounds near the house. It received the shot of three discharges before it was secured ; and even after being disabled it defended itself so powerfully as to elude every device of the gamekeeper for seizing it, till he thought of presenting it the muzzle of his gun, which it seized and held so firmly as to hang suspended from it by the beak while he carried it home. It measured nine feet four inches between the extremities of the wings, and the beak, talons, and legs indicated a strength proportioned to these dimensions. It continued to live for some time after the capture.

Eagles cannot be tamed without great difficulty. European falconers stigmatised them as "ignoble" because they could not train them to assist in field-sports like the hawks, or "noble falcons." The Tartars, however, have been able to effect this; they take the Eagles young, and train them to assist in the chase of hares, foxes, antelopes, and even wolves. Perhaps, however, the bird thus employed, which travellers call an Eagle, is only a species of hawk, like the *cherkh*, which is similarly employed in Persia. A pamphlet was, some years ago, published by Professor Reisner of Germany, with the object of showing that Eagles might be employed to direct balloons. He states the number of birds which would be necessary, according to the dimensions of the machine, and gives directions for the mode in which they should be harnessed, trained, and guided.

The following account of the Eagle which was in the Garden of Plants, at Paris, in 1807, may be suitably introduced in this place. "There has been for some time in the Garden of Plants, an Eagle, which her Majesty the Empress sent thither, and which is as much distinguished by his beauty as by the silver ring which he carries in one of his talons. It was originally domesticated with an English game-cock, which has at last served him for food. It is not known whether the death of the game-cock was produced by his own fierceness—by some movement of anger—or merely by the hunger of the Eagle. The following is the history of the Eagle since he lost his liberty. He was taken in the forest of Fontainebleau, in a trap set for foxes, the spring of which broke his claw. His cure was tedious, and attended by a painful operation, which was borne by the Eagle with a patience not often exceeded in man. During the operation, his head only was at liberty, and of this he did not avail himself to oppose the dressing of the wound, from which several splinters were taken, nor did he attempt to disturb the apparatus which the fracture required. Swathed in a napkin, and laid on one side, he has passed the entire night upon straw without the least motion. The next day, when all the bandages were

unwrapped, he lodged himself upon a screen, where he remained twelve entire hours without once resting on his unsound foot. During all this time he made no attempt to escape, though the windows were open. Yet he rejected all nourishment until the thirteenth day of his captivity, when he tried his appetite upon a rabbit which had been given to him. He seized it with his uninjured claw, and killed it with a stroke of his beak between the head and the first vertebra of the neck. After having devoured it, he resumed his usual place upon the screen, from whence he stirred no more until the twenty-first day after his accident. Then he began to try the wounded limb; and without in the least deranging the ligature by which it was bound, he has regained the use of it by moderate and reasonable exercise. This interesting creature has passed three months in the room of the servant who attended to him. As soon as the fire was lighted he came up to it, and suffered himself to be caressed; at bedtime he mounted his screen, as close as possible to the attendant's bed, but removed to the opposite extremity as soon as the lamp went out. Confidence in his own powers appeared to exempt him from any kind of distrust. It is impossible to show more resignation, more courage, and one might almost be tempted to say, more reason, than was exhibited by this Eagle during the long continuance of his illness. He is of the most beautiful kind, and does not appear to experience the least weakness in consequence of the accident which robbed him of his liberty."

The great Eagle is very destructive to lambs, young deer, kids, hares, poultry, &c. Low, in his "*Fauna Orcadensis*," says, that they do not abstain from pork in the Orkneys, but occasionally seize both old and young swine. A clergyman told him that he had seen one, mounted in the air, with a pretty large pig in his talons, which she let fall alive when he fired at her. Martin, in his "*Description of the Western Islands of Scotland*," published in 1716, speaking of this bird, says—"The Eagles are very destructive to the fawns and lambs. The natives observe that it fixes its talons between

the deer's horns, and beats its wings constantly about its eyes, which puts the deer to run continually till it falls into a ditch or over a precipice, where it dies, and so becomes a prey to this cunning hunter. There are at the same time several other Eagles of this kind, which fly on both sides of the deer, which fright it exceedingly, and contribute much to its more sudden destruction."

We rather doubt the latter portion of this statement, which describes several Eagles as uniting their exertions against the deer; as we do not remember to have met with any other instance of more than a single pair hunting together. The Eagle never engages in a perfectly solitary chase, except when the female is confined to her eggs or her young. At that season the proper prey of these Eagles is generally so abundant that the male is able to provide for his own wants and those of the family without the assistance of the female. At other times they unite their exertions, and are always seen either together or only at a short distance from each other. It is said that the one beats the bushes, while the other, perched on an eminence, watches the escape of the prey.

Pennant adds his authority to the former part of Martin's statement, and says that the Eagles in the island of Rum have nearly extirpated the deer that used to abound there.—He also states that Eagles seem to give a preference to the carcasses of cats and dogs. "Persons who make it their business to kill these birds lay that of one or other by way of bait, and then conceal themselves within gun-shot. They fire the instant the Eagle alights, for she that moment looks about before she begins to prey."

Martin, in the work just quoted, relates the following anecdote: and one very similar is also related by Sir Robert Sibbald. "There's a couple of large Eagles who have their nest on the north end of the isle [St. Kilda.] The inhabitants told me that they commonly make their purchase in the adjacent isles and continent, and never take so much as a lamb or hen from the place of their abode, where they propagate their kind. I forgot to mention a singular providence that

happened to a native of the Isle of Skie, called Neil, who, when an infant, was left by his mother in the field, not far from the houses on the north side of Loch-Portrie ; an Eagle came in the mean time and carried him away in his talons as far as the south side of the loch, and there laid him on the ground. Some people that were herding sheep there perceived it, and hearing the infant cry, ran immediately to its rescue ; and by good providence found him untouched by the Eagle, and carried him home to his mother. He is still living in that parish, and by reason of this accident is distinguished among his neighbors by the surname of Eagle." Ray mentions an instance of a child a year old being seized by an Eagle in one of the Orkneys and carried to the eyry, about four miles distant. But the mother, who was aware of its situation, pursued the bird thither, found her child in the nest, and took it home unhurt. It is not improbable that some similar circumstance gave rise to the impression of an Eagle and child on the coin of the Isle of Man.

Other parents have been less fortunate in rescuing their children from the power of the Eagle. The following instance is from Landt's "Description of the Feroe Islands":—"The white-tailed Eagle built its nest formerly on Tintholm, where some ruins of houses still show that a family once resided.—The Eagle one day darted down on a young child, which was lying at a little distance from its mother, and carried it to its nest. The mother hastened to the rock where the nest was constructed, and which is so steep towards the summit that the most experienced and boldest bird-catchers have never ventured to climb up it ; but the poor woman arrived too late, for the child was already dead, and its eyes torn out." Another instance occurred in the parish of Norderhougs in Norway, in 1737. As a boy, upwards of two years of age, was running from the house to his parents, who were at work in the fields at no great distance, an eagle pounced upon him and carried him off in their sight, in spite of the poor little fellow's screams and efforts. It is even stated by Anderson, in his "History of Iceland," that the same unhappy fate has

occasionally in that island befallen children of four or five years of age.

It is related in the life of De Thou, the historian, that when himself and Monsieur Schomberg were passing through part of France on an embassy from Henry III. to the king of Navarre, they were entertained for some days at Mande, the seat of the Bishop and Count of Gevaudan. At the first repast, it was observed with some surprise, that all the wild-fowl or game brought to table wanted either a head, or wing, a leg, or some other part, which occasioned their host pleasantly to apologise for the voracity of his caterer, who always took the liberty of first tasting what he had procured before it was brought to table. On perceiving the increased surprise of his guests, he informed them that in the mountainous regions of that district the Eagles were accustomed to build their eyries among the almost inaccessible rocks, which can only be ascended by ladders and grappling-irons. The peasants, however, when they have discovered a nest, erect a small hut at the foot of the rock, in which to shelter themselves from the fury of the birds when they convey provisions to their young; as also to watch the times of their departure from the nest. When this happens, they immediately plant their ladders, climb the rocks, and carry off what the Eagles have conveyed to their young, substituting the entrails of animals and other offal. The prey has generally been mutilated by the young Eagles before the men can get it; but in compensation for this disadvantage, it has a much finer flavor than any thing the markets can afford. He added, that when the young Eagles have acquired strength enough to fly, the shepherds fasten them to the nest, that the parent birds may continue to supply them the longer. Three or four Eagles' nests were in this way sufficient to furnish a splendid table throughout the year; and so far from murmuring at the ravages of the Eagles, he thought himself very happy in being situated in their neighborhood, and reckoned every eyrie as a kind of annual rent.

THE SWALLOW.

PLATE XXXII.

Class—Aves. *Order II.*—Passeres: Birds of passage.—

Family II.—Hirundinae. *Species*—Various.

I LOVE to hear, says Mr. Jesse, the screams of the restless swift, on one of our calm delightful summer evenings. I love to watch its flight, its various evolutions, and the boldness with which it unexpectedly passes close to me ; secure in the strength of its wings and the rapidity of its motions.

Though I cannot say that

“The tittering swallow skims the dimpled lake,”

yet it is continually flitting past me as it hawks for flies sometimes lightly touching the water, and then, describing one of its rapid and elegant circles on its banks. I delight in the Swallow. Its appearance tells me that fine weather is approaching, and there is an apparent hilarity and independence in its motions, which I always admire :—

“The swallow for a moment seen,
Skims in haste the village green.”

Sir Humphrey Davy has recorded his admiration of this bird in language almost poetical. “The Swallow,” he says, “is one of my favorite birds, and a rival of the nightingale, for he cheers my sense of seeing as much as the other does my sense of hearing. He is the glad prophet of the year—the harbinger of the best season—he lives a life of enjoyment amongst the loveliest forms of nature—winter is unknown to him ; and he leaves the green meadows of England in autumn for the myrtle and orange groves of Italy, and for the palms of Africa ; he has always objects of pursuit, and his success is secure. Even the beings selected for his prey are poetical, beautiful and transient. The ephemerae are

1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 40
 41
 42
 43
 44
 45
 46
 47
 48
 49
 50
 51
 52
 53
 54
 55
 56
 57
 58
 59
 60
 61
 62
 63
 64
 65
 66
 67
 68
 69
 70
 71
 72
 73
 74
 75
 76
 77
 78
 79
 80
 81
 82
 83
 84
 85
 86
 87
 88
 89
 90
 91
 92
 93
 94
 95
 96
 97
 98
 99
 100



1. Window. 2. Chimney. 3. Swift-winged. 4. Land Martin.

saved by his means from a slow and lingering death in the evening, and killed in a moment when they have known nothing but pleasure. He is the constant destroyer of insects, the friend of man, and may be regarded as a sacred bird.—His instinct, which gives him his appointed season, and teaches him when and where to move, may be regarded as flowing from a divine source ; and he belongs to the oracles of nature, which speak the awful and intelligible language of a present deity."

Martins, in addition to the nests in which they lay their eggs, build near them the apparent foundations of several others. On one of these the male roosts, while the female is sitting, and they both sometimes rest on them in the day time. Mr. White, however, thinks that these supernumerary constructions are the effect of caprice. Martins are the least agile and shortest winged of all the Swallow tribe. They take their prey in a middle region, not so high as the swift, nor do they usually sweep the ground so low as the Swallow. They breed the latest of all the Swallow genus, and usually stay with us latest ; like red-breasts, they are seldom seen at any distance from the habitations of man. They repair and inhabit nests of many years standing, to effect which they gather moss and grasses from the roofs of houses. I observe that when swifts unite flying they raise their wings over their backs. When Swallows bring out their broods, they place them on rails that go across a stream, and so take their food up and down the river, feeding their young in exact rotation. These generally keep in a row, close, or nearly so, to each other. If a hawk is in the air above them, the young Swallows may be seen turning their eyes towards it. It is extraordinary how soon instinct teaches animals to discover and avoid what may be hurtful to them. The reason of young Swallows being often found dead under the nest is, from their throwing themselves out in consequence of the nests being so full of insects as to become insupportable.

When Swallows are preparing to migrate, I observe that they take two or three flights to some height in the air, re-

turning each time to settle on the aytes or banks of the Thames. When about to take their final departure, they wheel round and round in the air, mounting higher and higher till they can be seen no longer, and but few stragglers are left behind. Swallows fly low on the approach of rain, as probably flies, and other insects, on which they feed, do not rise at such times above the surface of the land or water.

At a dinner party in London, the conversation turned upon Natural History, and I was much amused with a curious idea respecting Swallows and martins, which proceeded from a gentleman who sat next me. He told me that he had devoted much time and attention to the habits of these birds, having excellent opportunities of doing so, in consequence of their frequenting a particular spot opposite the window of a room in which he usually sat. His idea was, and he appeared to entertain but little doubt of its accuracy, that before Swallows and martins migrate, they make a small deposite of flies in a vacuum which may be found under each of the wings of these birds; and that these flies are fixed there by means of the same sort of glue which is used in working up the mud for their nests. These flies, he supposes, serve the birds for food during their long passage from this country to another.

It is impossible not to admire its rapid whirls, and long continued flight, dashing as it does, sometimes under the arch of a bridge, and at other times round and round a neighboring building, "squeaking as it goes in a very clamorous manner." This is supposed to be the mode in which the male serenades the hen when sitting, and I think there can be little doubt but that such is the case. The squeak is repeated every time the bird passes the entrance of the nest; and I have observed that at such time its flight perceptibly slackens.—The swift keeps on the wing longer, perhaps, than any other bird, never going to roost in the longer days till about a quarter before nine. Just before they retire for the night, their squeak may be heard, and they then dash and shoot about with wonderful rapidity. They are on the wing at least seventeen hours, when the days are at their greatest length.

Mr. White remarks that the house or chimney Swallow is, undoubtedly, the first comer of all the British hirundines, and that it in general makes its appearance on or about the 13th of April. Late or early, however, I am always glad to see it, forming, as it does, an essential part in the *hilarity* of nature :

“ Gentle bird ! we find thee here,
When nature wears her summer vest,
Thou com'st to weave thy simple nest ;
And when the chilling winter lowers,
Again thou seek'st the genial bowers.” MOORE.

Open as my eyes are, and I trust ever will be, to the charms of nature, and every circumstance attending her beautiful economy, I must not omit to mention the graceful and elegant manner with which my favorite, the Swallow, touches the surface of the water in her flight :—

“*Arguta lacus circum volitavit hirundo.*”—VIRGIL.

Her motive for doing this I know not ; probably, she sometimes sips of the element over which she is flying, or moistens a piece of clay for her nest. Swallows, like swifts, will hawk for flies from three o'clock in the long summer mornings until nine at night, so earnest are they in pursuit of food. Unlike the swift, however, they occasionally stop to rest themselves, and they then sing very prettily.

I often think how much we should miss the Swallow tribe, if they were no longer to make their appearance in this country. One of the consequences of the late hurricane in some of the West India Islands, was to sweep off the whole of the humming birds : and I can fancy how desolate would be the face of this country should an occurrence of a similar nature deprive us of our friends the Swallows. Moreover, they are of real consequence to us, as the destroyers of myriads of gnats and troublesome insects. They do not confine themselves to districts, but follow insects wherever they are most abundant, thus keeping them within proper bounds, and rendering us a most essential service. I have watched them hawking for flies over some fine meadows where the latter are very abun-

dant; and then, as if with one consent, settle on the tops of some high elms for a few minutes; the whole quitting them, however, at the same instant. There is an apparent glee and sportiveness amongst Swallows on a fine summer's evening, which I have much pleasure in watching.

“So when the earth smiles with a summer's ray,
The wanton swallows o'er the valleys play;
In sport each other they so swiftly chase,
Sweeping with easy wings the meadow's face,
They seem upon the ground to *fly* a race.”—BLACKMORE

Swallows seem to entertain the recollection of injury, and to resent it when an opportunity offers. A pair of Swallows built their nest under the ledge of a house at Hampton Court. It was no sooner completed, than a couple of sparrows drove them from it, notwithstanding the Swallows kept up a good resistance, and even brought others to assist them. The sparrows were left in peaceable possession of the nest, till the old birds were obliged to quit it at the same time to provide food for their young. They had no sooner departed, than several Swallows came and broke down the nest; and I saw the young sparrows lying dead on the ground. As soon as the nest was demolished, the Swallows began to rebuild it. The whole transaction was witnessed by a gentleman who resided close to the spot.

A remarkable instance of the sense and reflection of the Swallow (I must not call it reason), was lately related to me by a nobleman, whose accuracy and good sense are only equalled by his kindness and benevolence. He informed me, that a pair of Swallows built their nest under the arch of a lime-kiln at its extreme point, and from which three chimneys or flues branched off. At the time the nest was constructing, the heat of the kiln was so great, that only keeping the hand for a short time within the arch, produced a painful sensation. In this spot, however, the nest was nearly completed, when the heat caused it to crumble, and fall to the ground. A second nest was built in the same spot, and afterwards a third, both of which shared the same fate. A fourth nest was then

built, which stood perfectly well, although the heat of the kiln had by no means abated ; and in this nest the Swallows hatched and brought up their young. The following year another nest was begun and finished in the same spot, and with the same heat in the kiln, which stood the influence of the fire, and in which the Swallows hatched and reared their brood ; and this was done in the same manner on the third year. The fourth year the Swallows did not appear, which the lime-burner considered as very ominous of the future success of his kiln. They had probably been destroyed.

In reading the above account, of the accuracy of which no doubt need be entertained, as the most satisfactory proof of it can at any time be brought forward, it is impossible not to be struck with the following facts.

1st. The Swallows must have discovered and worked up a sort of clay or earth which would stand heat.

2d. Instinct alone would not have taught them to do this.

3d. On returning to the kiln the second and third years, they must have kept in their recollection not only the fact, that the earth they commonly used to build their nests with would not stand heat, but must also have remembered the sort of earth or clay which was requisite, and the necessity of their making use of it in that particular place.

Those persons, who are inclined to agree that mere instinct could have taught Swallows to perform what has been here related, are not, I think, doing justice to the sense and intelligence of these interesting birds. If reason did not influence their operations, it was something very nearly allied to it ; but where that alliance begins and ends, is a question which it is not easy to answer. Mr. White says, that philosophers have defined *instinct*, to be that secret influence by which every species is impelled naturally to pursue, *at all times, the same way or tract*, without any teaching or example ; whereas *reason*, without instruction, would often vary, and do that by many methods, which instinct effects by one alone. If this definition of the difference between instinct and reason is correct, the instance which I have just related respecting the

Swallows, would seem to entitle them to be called reasoning animals.

Let me here introduce a little anecdote, corroborative of what I have been saying of the superior intellect of the Swallow. I received it from a person on whose veracity I can place the most perfect reliance, and who himself witnessed the whole of the proceedings. I have heard a similar story, but never before from such good authority.

A pair of Swallows built their nest against one of the first floor windows of an uninhabited house in Merrion Square, Dublin. A sparrow, however, took possession of it, and the Swallows were repeatedly seen clinging to the nest, and endeavoring to gain an entrance to the abode they had erected with so much labor. All their efforts, however, were defeated by the sparrow, who never once quitted the nest.—The perseverance of the Swallows was at length exhausted: they took flight, but shortly afterwards returned, accompanied by a number of their congeners, each of them having a piece of dirt in its bill. By this means they succeeded in stopping up the hole, and the intruder was immured in total darkness. Soon afterwards the nest was taken down and exhibited to several persons, with the dead sparrow in it. In this case there appears to have been not only a reasoning faculty, but the birds must have been possessed of the power of communicating their wishes, or rather, their resentments, to their fellow species; without whose aid they could not thus have avenged the injury they had sustained. This anecdote may appear to many persons marvellous and improbable, but I am as much convinced of its truth, as if it had been witnessed by all the world. It is Grotius, I think, who styles this faculty in animals, "*extranea ratio*;" and the Swallow, certainly, appears to possess it in a great degree.

Swallows delight in warm and sunny situations, probably because flies are more abundant there than in other places. That accurate observer of nature, Shakspeare, speaking of martins and Swallows, says,—

—“Where they do bide and build,
The air is temperate.”

That Swallows are of vast use in keeping down an undue proportion of insects, there can be no doubt ; and the following, which I received from an amiable and observant clergyman, will prove it. He informed me, that while he held the living of Tedstone Delamere, in Herefordshire, he was fond of encouraging Swallows to build about his residence ; in the first instance this arose from no other motive than a desire to see them unmolested ; but he afterwards found his advantage in it. The beautiful parish of Tedstone contains many hop-gardens, one of which was attached to the rectory, and rendered unusually picturesque and pleasing, by having winding walks formed amidst the plantation. These walks were of great beauty while the festoons of amber blossoms were overhanging them on every side. To some of the detached houses in the parish, martins and Swallows seemed as partial as they did to the rectory, but the birds were shot at by the farmers, to "keep their hands in for the first of September," while their nests were demolished as fast as they were built. The consequence was, that the colony at the rectory was considerably increased by the persecuted birds resorting to it, and the advantage derived from them was this:—one season when there was a general failure of crops in the hop-gardens throughout the parish, the one belonging to the rectory blossomed in abundant beauty. This was attributed to the numerous little willing laborers, who from morning to night were winging their way among the poles, devouring myriads of flies, and conveying still greater numbers to their young. So convinced were the farmers of the error they had committed in destroying these birds, that they ceased to persecute them any longer. It has, however, always been accounted unlucky to destroy Swallows. We read in *Ælian*, that these birds were sacred to the *penates*, or household gods. They were honored anciently as the nuncios of the spring, and the Rhodians are said to have had a solemn anniversary song to welcome in these charming heralds of summer.

Anacreon, however, does not always appear to be in such good humor with them, though his very threats seem to shew

his fondness for these harbingers of spring. Who is not acquainted with his beautiful ode, in which he reproaches the Swallow for disturbing his repose; or the beautiful translation of it by the bard of Ireland?

“Silly swallow! prating thing,
Shall I clip that wheeling wing;
Or, as Tereus did of old,
(So the fabled tale is told,)
Shall I tear that tongue away—
Tongue that uttered such a lay!”

So little was known of the emigration of the Swallow fifty years ago, that Dr. Johnson in one of his conversations with Boswell, makes the following observation. “Swallows certainly sleep all the winter. A number of them *conglobulate* together, by flying round and round, and then all in a heap throw themselves under water, and lie in the bed of a river.”—This idea is still prevalent amongst many persons who reside on the banks of the Thames. They see Swallows settling and roosting by hundreds and thousands on the willows growing on the aytes of the river, which are bent down to the edge of the water by the weight of the birds, and the next day, perhaps, not one is to be seen. It is therefore concluded, that they have immersed themselves. It is a common trick amongst the Thames fishermen in this neighborhood to send a *new-comer* late in the evening, with the offer of some small reward, to an ayte which is covered with Swallows, one of which he is to catch with his hand. I am assured that such is the vigilance and activity of these birds, that however dark the night, and however great the caution used, no one instance has occurred of a bird being taken in the manner I have mentioned.

It is an interesting sight to watch the young chimney Swallows after they have quitted their nest, sitting quietly on the top of a chimney and receiving, one after another, the food brought to them by the parent bird. During the period of incubation, the male shews the greatest affection for, and attention to, his mate, and serenades her from the chimney top as soon as the first gleam of light appears.

Kalm, in his travels in America, tells a pretty anecdote of the Swallow, which, he says, was related to him by a lady of great respectability, who was a witness of the fact.

“A couple of Swallows built their nest in a stable belonging to the lady in question, and the female laid eggs in the nest, and was about to sit upon them. Some days after, the male was seen flying about the nest, sometimes sitting on a nail near it, and uttering a very plaintive note, which betrayed his uneasiness. On a nearer examination, the female was found dead in the nest, from which she was removed, and her body was thrown away. The male then went to sit upon the eggs, but after being about two hours on them, and perhaps finding the business too troublesome, he went out, and returned in the afternoon with another female, who sat upon the nest, and afterwards fed the young ones, till they were able to provide for themselves.”

I have frequently noticed how apt Swallows are to settle on the ground, in a row, or perfect line. I have no doubt but that many persons must have observed this, while they have been walking during a fine autumnal day. The birds, after hawking for flies upon the surface of the water, will all at once settle on the path which extends across the head of the river in so perfect a line, that one looks at it with astonishment as the simultaneous act of the birds. Their flight is equally sudden and regular on the approach of an intruder. I have also noticed this regularity of line in young birds, while waiting for food from their parents.

I observed a curious departure from the usual mode of building, in the martin. The circumstance occurred at the Virginia Water, in Windsor Great Park. Near the fishing temple on that beautiful lake, there is a cottage, part of which is covered with a *treillage*, against which a pair of Swallows had endeavored to build their clayey nest, the spot they had chosen being protected from the weather by the large and projecting wooden eaves of the cottage. Whether they found any difficulty in fixing the earth for their nest, in the peculiar spot they had selected, or from some other cause, the vacancy

only between the wall and the treillage was filled up with a small deposit of clay, but the nest itself was built of grass and straw, and was fixed alike in the treillage and the deposit of clay. Here I saw the Swallow sitting on her eggs, the depth of the nest being very inconsiderable.

I trust that I have now made my readers sufficiently acquainted with these interesting "guests of summer," but, before I conclude this notice of them, I would plead in their behalf, for the purpose of endeavoring to put a stop to the cruel custom of wantonly shooting at them. Independent of the cruelty of starving whole nests of young ones by killing the old birds, they may be scared from a neighborhood by being frequently disturbed; but then comes a redundancy of insects, producing blight, mildew, and other disorders on our corn and plants. We are also deprived of their hilarity, their thousand meanderings in the air, their pretty twitterings, and all the agreeable associations which their presence gives rise to. The Swallow-shooter is, moreover, guilty of a breach of hospitality, by destroying a bird which has voluntarily placed itself under his protection, and which has always been considered as a privileged guest.

"The swallow, privileged above the rest
Of all the birds as man's familiar guest,
Pursues the sun, in summer brisk and bold,
And wisely shuns the persecuting cold;
When frowning skies begin to change their cheer,
And time turns up the wrong side of the year,
It seeks a better heav'n and warmer climes."—DRYDEN.



1. The Porcupine. 2 The Hedgehog.

THE HEDGEHOG.

PLATE XXXIII.

Class—Mammalia. *Order*—Rodentia: gnawers. *Genus*—*Hystrix*. *Species*—*Cristata*, *prehensiles* and *dorsata*.

THE name of this animal leads us into an error, and induces many to imagine, that it is only a hog covered with quills, when, in fact, it only resembles that animal by its grunting. In every other respect, it differs from the hog as much as any other animal, as well in outward appearance as in the interior conformation. Instead of a long head and ears, armed with tusks, and terminated with a snout; instead of a cloven foot, furnished with hoofs, like the hog, the Porcupine has a short head, like that of the beaver, with two large incisive teeth in the fore part of each jaw; no tusks, or canine teeth: the muzzle is divided like that of the hare; the ears are round and flat, and the feet armed with nails; instead of a large stomach with an appendage in form of a caul, the porcupine has only a single stomach, with the large cœcum gut. By all these marks, as well as by its short tail, its long whiskers, and its divided lip, it partakes more of the hare, or beaver kind, than that of the hog.

Animals of the Hedgehog kind require but very little accuracy to distinguish them from all others. That hair which serves the generality of quadrupeds for warmth and ornament, is partly wanting in these; while its place is supplied by sharp spines or prickles, that serve for their defence. This general characteristic, therefore, makes a much more obvious distinction than any that can be taken from their teeth or their claws. Nature, by this extraordinary peculiarity, seems to have separated them in a very distinguished manner; so that, instead of classing the Hedgehog among the moles, or the porcupine with the hare, as some have done, it is much more natural and obvious to place them, and others approaching

them, in this strange peculiarity, in a class by themselves ; nor let it be supposed, that while we thus alter their arrangement, and separate them from animals with which they have been formerly combined, that we are destroying any secret affinities that exist in nature. It is natural, indeed, for readers to suppose, when they see two such opposite animals as the hare and the porcupine assembled together in the same group, that there must be some material reason, some secret connexion, for thus joining animals so little resembling each other in appearance. But the reasons for this union were very slight, and merely arose from a similitude in the fore teeth ; no likeness in the internal conformation, no similitude in nature, in habitudes, or disposition ; in short, nothing to fasten the link that combines them, but the similitude in the teeth : this, therefore, may be easily dispensed with ; and, as was said, it will be most proper to class them according to their most striking similitudes.

The Hedgehog, with an appearance the most formidable, is yet one of the most harmless animals in the world : unable or unwilling to offend, all its precautions are only directed to its own security ; and it is armed with a thousand points, to keep off the enemy, but not to invade him. While other creatures trust to their force, their cunning, or their swiftness, this animal, destitute of all, has but one expedient for safety ; and from this alone it often finds protection. As soon as it perceives itself attacked, it withdraws all its vulnerable parts, rolls itself into a ball, and presents nothing but its defensive thorns to the enemy ; thus, while it attempts to injure no other quadruped, they are equally incapable of injuring it : like those knights, we have somewhere read of, who were armed in such a manner, that they could neither conquer others, nor be themselves overcome.

This animal is of two kinds : one with a nose like the snout of a hog ; the other more short and blunt, like that of a dog. That with the muzzle of a dog is the most common, being about six inches in length, from the tip of the nose to the insertion of the tail. The tail is little more than an inch long ;

and so concealed by the spines, as to be scarce visible : the head, back, and sides, are covered with prickles ; the nose, breast, and belly, are covered with fine soft hair ; the legs are short, of a dusky color, and almost bare ; the toes on each foot are five in number, long and separated ; the prickles are about an inch in length, and very sharp pointed ; their lower part is white, the middle black, and the points white ; the eyes are small, and placed high in the head ; the ears are round, pretty large, and naked ; the mouth is small, but well furnished with teeth ; these, however, it only uses in chewing its food, but neither in attacking or defending itself against other animals. Its only reliance in cases of danger, is on its spines ; the instant it perceives an enemy, it puts itself into a posture of defence, and keeps upon its guard until it supposes the danger over. On such occasions, it immediately alters its whole appearance : from its usual form, somewhat resembling a small animal, with a bunch on its back, the animal begins to bend its back, to lay its head upon its breast, to shut its eyes, to roll down the skin of its sides towards the legs, to draw these up, and lastly, to tuck them in every side, by drawing the skin still closer. In this form, which the Hedgehog always puts on when disturbed, it no way resembles an animal, but rather a roundish mass of prickles, impervious on every side. The shape of the animal thus rolled up, somewhat resembles a chesnut in the husk ; there being, on one side, a kind of flat space, which is that on which the head and legs have been tucked in.

Such is the usual appearance of the Hedgehog, upon the approach of any danger. Thus rolled up in a lump, it patiently waits till its enemy passes by, or is fatigued with fruitless attempts to annoy it. The cat, the weasel, the ferret, and the martin, quickly decline the combat ; and the dog himself generally spends his time in empty menaces, rather than in effectual efforts. Every increase of danger only increases the animal's precautions to keep on its guard ; its assailant vainly attempts to bite, since he thus more frequently feels than inflicts a wound ; he stands enraged and barking, and rolls it

along with the paws ; still, however, the Hedgehog patiently submits to every indignity, but continues secure ; and still more to disgust its enemy with the contest, sheds its urine, the smell of which is alone sufficient to send him away. In this manner the dog, after barking for some time, leaves the Hedgehog where he found him, who, perceiving the danger past, at length peeps out from its ball, and, if not interrupted, creeps slowly to its retreat.

The Hedgehog, like most other wild animals, sleeps by day and ventures out by night. It generally resides in small thickets, in hedges, or in ditches covered with bushes ; there it makes a hole of about six or eight inches deep, and lies well wrapped up, in moss, grass, or leaves. Its food is roots, fruits, worms, and insects. It is also said to suck cattle, and hurt their udders ; but the smallness of its mouth will serve to clear it from this reproach. It is said also, to be very hurtful in gardens and orchards, where it will roll itself in a heap of fruit, and so carry a large quantity away upon its prickles ; but this imputation is as ill grounded as the former, since the spines are so disposed, that no fruit will stick upon them, even if we should try to fix them on. It rather appears to be a very serviceable animal, in ridding our fields of insects and worms, which are so prejudicial to vegetation.

Mr. Buffon, who kept these animals tame about his house, acquits them of the reproach of being mischievous in the garden, but then he accuses them of tricks, of which, from the form and habits of this animal, one would be never led to suspect them. "I have often," says he, "had the female and her young brought me about the beginning of June : they are generally from three to five in number : they are white in the beginning, and only the marks of their spines appear : I was willing to rear some of them, and accordingly put the dam and her young into a tub, with abundant provision beside them ; but the old animal, instead of suckling her young, devoured them all, one after another. On another occasion an Hedgehog that had made its way into the kitchen, discovered a little pot, in which there was meat prepared for boil-

ing ; the mischievous animal drew out the meat, and left its excrements in the stead. I kept males and females in the same apartment, where they lived together, but never coupled. I permitted several of them to go about my garden, they did very little damage ; and it was scarcely perceivable that they were there : they lived upon the fruits that fell from the trees ; they dug the earth into shallow holes ; they eat caterpillars, beetles, and worms ; they were also very fond of flesh, which they devoured boiled or raw."

They couple in spring, and bring forth about the beginning of summer. They sleep during the winter, and what is said of their laying up provisions for that season, is consequently false. They at no time eat much, and can remain very long without any food whatsoever. Their blood is cold, like all other animals that sleep during the winter. Their flesh is not good for food ; and their skins are converted to scarce any use.

THE TANREC AND TENDRAC.

The Tanrec and Tendirac, are two little animals described by Mr. Buffon, of the Hedgehog kind ; but yet sufficiently different from it to constitute a different species. Like the Hedgehog they are covered with prickles, though mixed in a greater proportion with hair ; but unlike that animal, they do not defend themselves by rolling up in a ball. Their wanting this property is alone sufficient to distinguish them from an animal in which it makes the most striking peculiarity : as also, that in the East Indies, where only they are found, the Hedgehog exists separately also ; a manifest proof that this animal is not a variety caused by the climate.

The Tanrec is much less than the Hedgehog, being about the size of a mole, and covered with prickles, like that animal, except that they are shorter and smaller. The Tendirac is still less than the former, and is defended only with prickles upon the head, the neck, and the shoulders ; the rest being covered with a coarse hair, resembling a hog's bristles. These little animals, whose legs are very short, move but slowly.—

They grunt like a hog, and wallow, like it, in the mire. They love to be near water, and spend more of their time there, than upon land. They are chiefly in creeks and harbors of salt water. They multiply in great numbers, make themselves holes in the ground, and sleep for several months. During this torpid state, their hairs (and we should also suppose their prickles) fall; and they are renewed upon their revival. They are usually very fat; and although their flesh be insipid, soft, and stringy, yet the Indians find it to their taste, and consider it as a very great delicacy.

THE PORCUPINE.

Those arms which the Hedgehog possesses in miniature, the Porcupine has in a more enlarged degree. The short prickles of the Hedgehog, are, in this animal, converted into shafts. In the one, the spines are about an inch long; in the other, a foot. The Porcupine is about two feet long, and fifteen inches high. Like the Hedgehog, it appears a mass of misshapen flesh, covered with quills, from ten to fourteen inches long, resembling the barrel of a goose-quill in thickness, but tapering and sharp at both ends. These, whether considered separately or together, afford sufficient subject to detain curiosity. Each quill is thickest in the middle; and inserted into the animal's skin, in the same manner as feathers are found to grow upon birds. It is within-side spongy, like the top of a goose-quill; and of different colors, being white and black alternately, from one end to the other. The largest are often found fifteen inches long, and a quarter of an inch in diameter; extremely sharp, and capable of inflicting a mortal wound. They seem harder than common quills, being difficult to be cut, and solid at that end which is not fixed in the skin. If we examine them in common, as they grow upon the animal, they appear of two kinds: the one such as I have already described; the other, long, flexible, and slender, growing here and there among the former.—There is still another sort of quills, that grow near the tail, white and transparent, like the writing quills, and that seem

to be cut short at the end. All these quills, of whatever kind, incline backwards, like the bristles of a hog ; but when the animal is irritated, they rise, and stand upright, as bristles are seen to do.

Such is the formation of this quadruped, in those parts in which it differs from most others ; as to the rest of its figure, the muzzle bears some resemblance to that of a hare, but black ; the legs are very short, and the feet have five toes, both before and behind ; and these, as well as the belly, the head, and all other parts of the body, are covered with a sort of short hair, like prickles, there being no part, except the ears and the sole of the foot, that is free from them : the ears are thinly covered with very fine hair, and are in shape like those of mankind ; the eyes are small, like those of a hog, being only one-third of an inch from one corner to the other. After the skin is taken off, there appears a kind of paps on those parts of the body from whence the large quills proceed ; these are about the size of a small pea, each answering to as many holes which appear on the outward surface of the skin, and which are about half an inch deep, like as many hollow pipes, wherein the quills are fixed, as in so many sheaths.

This animal seems to partake very much of the nature of the Hedgehog ; having this formidable apparatus of arms rather to defend itself, than annoy the enemy. There have been, indeed, many naturalists who supposed that it was capable of discharging them at its foes, and killing at a great distance off. But this opinion has been entirely discredited of late ; and it is now universally believed that its quills remain firmly fixed in the skin, and are then only shed when the animal moults them, as birds do their feathers. It is true, we are told by Ellis, that a wolf at Hudson's Bay was found dead, with the quills of a Porcupine fixed within its mouth ; which might have very well happened, from the voraciousness of the former, and not the resentment of the latter. That rapacious creature, in the rage of appetite, might have attempted to devour the Porcupine, quills and all, and very probably paid the forfeit by its life. However this be, of all

the Porcupines that have been brought into Europe, not one was ever seen to launch their quills ; and yet the irritations they received were sufficient to have provoked their utmost indignation. Of all the Porcupines that Dr. Shaw observed in Africa, and he saw numbers, not one ever attempted to dart its quills ; their usual manner of defence being, to lie on one side, and when the enemy approaches very near, by suddenly rising, to wound him with the points on the other.

It is probable, therefore, that the Porcupine is seldom the aggressor ; and when attacked by the bolder animals, it only directs its quills so as to keep always pointing towards the enemy. These are an ample protection ; and, as we are assured by Kolben, at such times, even the lion himself will not venture to make an attack. From such, therefore, the Porcupine can defend itself ; and chiefly hunts for serpents, and all other reptiles, for subsistence. Travellers universally assure us, that between the serpent and the Porcupine there exists an irreconcilable enmity, and that they never meet without a mortal engagement. The Porcupine, on these occasions, is said to roll itself upon the serpent, and thus destroy and devour it. This may be true ; while, what we are informed by M. Sarrasin, of the Porcupine of Canada chiefly subsisting on vegetables, may be equally so. Those which are brought to this country to be shown, are usually fed on bread, milk, and fruits ; but they will not refuse meat when it is offered them ; and it is probable, they prefer it in a wild state, when it is to be had. The Porcupine is also known to be extremely hurtful to gardens ; and, where it enters, does incredible damage.

The American Indians, who hunt this animal, assure us, that the Porcupine lives from twelve to fifteen years. During the time of coupling, which is in the month of September, males become very fierce and dangerous, and often are seen to destroy each other with their teeth. The female goes with young seven months, and brings forth but one at a time - this she suckles but about a month, and accustoms it betimes to live, like itself, upon vegetables and the bark of trees ; she is

very fierce in its defence ; but, at other seasons, she is fearful, timid, and harmless. The Porcupine never attempts to bite, nor any way to injure its pursuers ; if hunted by a dog or a wolf, it instantly climbs up a tree, and continues there until it has wearied out the patience of its adversary ; the wolf knows by experience, how fruitless it would be to wait : he therefore leaves the Porcupine above, and seeks out for a new adventure.

The Porcupine does not escape so well from the Indian hunter, who eagerly pursues it, in order to make embroidery of its quills, and to eat its flesh. This, as we are commonly told, is very tolerable eating : however, we may expect wretched provisions when the savages are to be our caterers, for they eat every thing that has life. But they are very ingenious with regard to their embroidery : they die the quills of various colors, and then splitting them into slips, as we see in the making of a cane-chair, they embroider with these their belts, baskets, and several other necessary pieces of furniture.

As to the rest, there are many things related concerning this animal that are fabulous ; but there are still many circumstances more, that yet remain to be known. It were curious to inquire whether this animal moults its quills when wild, for it is never seen to shed them in a domestic state ; whether it sleeps all the winter, as we are told by some naturalists, which we are sure it does not when brought into our country ; and, lastly, whether its quills can be sent off with a shake ; for no less a naturalist than Reaumur was of that opinion.

All that we can learn of an animal exposed as a show, or even by its dissection, is but merely its conformation ; and that makes one of the least interesting parts of its history.—We are naturally led, when presented with an extraordinary creature, to expect something extraordinary in its way of living, something uncommon, and corresponding with its figure ; but of this animal we know little with any precision, except what it offers in a state of captivity. In such a situation, they appear to very little advantage ; they are extremely

dull and torpid, though very wakeful; and extremely voracious, though very capable of sustaining hunger; as averse to any attachment, as to being tamed: they are kept in iron cages, and the touching one of the bars is sufficient to excite their resentment, for their quills are instantly erected; and the poet was right in his epithet of *fretful*, for they appear the most irascible creatures upon earth.

THE COUANDO, OR BRAZILIAN PORCUPINE.

The Porcupine, as has been observed, is a native of the hot countries of the Old World; but, not having been found in the New, travellers have not hesitated to give its name to animals which seemed to resemble it, and particularly to that of which we are about to take notice. On the other hand, the Couando of America has been transported to the East Indies; and Pison, who probably was not acquainted with the Porcupine, has engraved in Bontius the Couando of America, under the name and description of the true Porcupine. The Couando, however, is not a Porcupine, it being much less; its head and muzzle is shorter; it has no tuft on its head, nor slit in the upper lip; its quills are somewhat shorter, and much finer; its tail is long, and that of the Porcupine is very short; it is carnivorous, rather than frugivorous, and endeavors to surprise birds, small animals, and poultry, while the Porcupine only feeds upon herbs, greens, fruits, &c. It sleeps all the day, like the Hedgehog, and only stirs out in the night; it climbs up trees, and hangs in the branches by its tail, which the Porcupine cannot do. All travellers agree that its flesh is very good eating. It is easily tamed, and commonly lives in high places. These animals are found over all America, from Brazil and Guiana to Louisiana and the southern parts of Canada: while the Porcupine is only to be found in the hottest parts of the Old Continent.

In transferring the name of the Porcupine to the Couando, they have supposed and transmitted to him the same faculties, especially that of lancing his quills. Ray is the only

person who has denied these circumstances, although they evidently appear at first view to be absurd.

THE URSON, OR CANADA PORCUPINE.

This animal, placed by nature in the desert part of North America, to the east of Hudson's Bay, exists independent of, and far distant from, man. The *Urson* might be called the *spiny beaver*, it being of the same size, the same country, and the same form of body ; it has, like that, two long, strong, and sharp incisive teeth at the end of each jaw ; its prickles are short, and almost covered with hair ; for the Urson, like the beaver, has a double coat ; the first consists of long and soft hair, and the second, of a down, or felt, which is still softer or smoother. In the young Ursons, the prickles are proportionably larger, more apparent, and the hair shorter and scarcer than in the adults.

This animal dislikes water, and is fearful of wetting himself. He makes his habitation under the roots of great hollow trees, sleeps very much, and chiefly feeds upon the bark of juniper. In winter, the snow serves him for drink ; in summer, he laps water like a dog. The savages eat his flesh, and strip the bristles off the hide, which they make use of instead of pins and needles. Many of the trading Americans also depend upon them for food at certain seasons of the year.

THE KINKAJOU.

PLATE XXXIV.

Class—Mammalia. *Order*—Plantigrade carnivora. *Genus*
—*Cercoleptes*.

THE Kinkajou is one of those animals which the naturalist has rarely an opportunity of observing in captivity ; nor indeed are there many museums of Europe in which a preserved specimen is to be found. To these causes are to be attributed the obscurity attending its history, and the contradictory opinions which have been entertained respecting its true character and the station it occupies. Desmarest was the first who assigned to this animal its true situation among the *plantigrade carnivora*. Illeger formed for it a genus under the title of *cercoleptes*, which is that now generally retained. The species (a single one, as far as we know) is the *cercoleptes condivolvulus*. The Kinkajou is a native of Southern and Intertropical America, where it appears to be extensively spread, and is known under different appellations. In New Grenada it is called, by the native Indians, *guchumbi*, and *manaviri* in the mission of Rio Negro. In its manners it much resembles the coati-mondi (*nasua fusca*), but differs from that animal not only in the shape of the head, which is short and compact, but also in having a *prehensile tail*. Of recluse and solitary habits, the Kinkajou lives for the most part among the branches of the trees in large woods or forests, and is in every respect well adapted for climbing : being, however, decidedly nocturnal, it is but little exposed to the observation even of those who sojourn among the places frequented by it. During the day it sleeps in its retreat, rolled up like a ball, and, if roused, appears torpid and inactive. As soon, however, as the dusk of evening sets in, it is fully awake, and is all activity, displaying the utmost restlessness and ad-



The Viviparous.



dress, climbing from branch to branch in quest of food, and using its prehensile tail to assist itself in its manœuvres.— Few mammalia are more incommoded by light than the Kinkajou: we have seen the pupils of the eyes contracted to a mere round point, even when the rays of the sun have not been very bright, while the animal at the same time testified by its actions its aversion to the unwelcome glare.

In size, the Kinkajou is equal to a full-grown cat, but its limbs are much stouter and more muscular, and its body more firmly built. In walking, the sole of the foot is applied fairly to the ground, as in the case of the badger. Its claws are strong and curved, the toes on each foot being five. The ears are short and rounded. The fur is full, but not long, and very closely set. There is no animal among the carnivora (as far as our experience goes,) in which the tongue is endowed with more remarkable powers of extension. Among ruminating animals, capable of extending this organ to a very great length, and of using it much in the same manner as the elephant does the extremity of his proboscis, drawing down by it the twigs and boughs of the trees, upon the leaves of which the creature feeds;—in like manner can the Kinkajou thrust forth its tongue, a long and slender instrument, capable of being inserted into crevices, or fissures, in search of insects, reptiles, or the eggs of birds. Baron Humboldt informs us that this animal is an extensive devastator of the nests of the wild bee, whence the Spanish missionaries have given it the name of “honey-bear,” and that it uses its long tongue to lick up the honey from the cells of the comb. In its fondness for honey it is not singular, for the ratel (*mellivora capensis*), a plantigrade allied to the badger, is also celebrated for the havoc it makes among the hives of the wild bee in order to obtain the luscious contents. In addition, however, to this food, birds, eggs, small animals, roots, and fruits, constitute the diet of the Kinkajou; and, as we have seen, it will draw these articles towards it with its tongue, when presented just within its reach. In drinking, it laps like a dog, and also makes use of its fore-paws occasionally in holding

food, and even in conveying it to the mouth, as well as in seizing its prey. In its aspect there is something of gentleness and good nature ; and in captivity it is extremely playful, familiar, and fond of being noticed. In its natural state, however, it is sanguinary and resolute.

The Kinkajou was not unknown to Buffon, who, however, for a long time confounded it with the glutton—nor was he aware of his error until an opportunity occurred of his seeing two of these animals. One was exhibited at Saint Germain in 1773, under the title of ‘an animal unknown to naturalists.’ The other was in the possession of a gentleman in Paris, who brought it from Mexico. This latter individual was suffered to go at large, being perfectly tame ; and, after rambling about all night, would return to its accustomed sleeping place, where it was always to be found in the morning.—“Without being docile,” says M. Chauveau, in a note to Buffon, “it is familiar, but only recognises its master, and will follow him. It drinks every fluid—water, coffee, milk, wine, and even brandy if sweetened with sugar, with which latter it will become intoxicated ; but it is ill for several days afterwards. It eats, with the same indifference, bread, meat, pulse, roots, and especially fruits. It is passionately fond of scents, and eagerly devours sugar and sweetmeats. It darts upon poultry, always seizing them under the wing. It appears to drink the blood only, leaving them without tearing the body to pieces. When the choice is at its option, it prefers duck to fowl, but it fears the water.”

M. de Sive, speaking of the Kinkajou exhibited at St. Germain, observes, that it was at first very good tempered, but soon began to be savage, in consequence of being perpetually irritated by the public. He notices also its dexterity in climbing, and adds that “it often rests on its hind limbs, and scratches itself with its fore paws, like monkeys. * * * It feeds like a squirrel, holding between its paws the fruits or vegetables which are given to it. It has never been offered meat or fish ; when irritated it endeavors to dart on the assailant, and its cry in anger resembles that of a large rat. * * * It dexterously

uses its tail in a hook-like manner to draw towards itself different objects it wishes to obtain ; it is also fond of suspending itself by the tail, twining it round anything which is within its reach." Notwithstanding, however, that Buffon had seen the Kinkajou, so little was known as to its manners in a state of nature, and the range of its habitat, that this writer, misled by an account of Denis, regarded an animal called by this name (which indeed has been often applied to the glutton) as the one before us—and quotes the words of Denis, who states it to lurk among the branches, and drop down upon the elk or moose deer, (as the glutton is also erroneously said to do,) twist its tail round its neck, and bite it above the ears, till at length the deer sinks down exhausted. The account of Denis is altogether unworthy of notice.

An individual of this species lately died, at the gardens of the Zoological Society : it had lived in the possession of the Society about seven years, and was remarkable for gentleness and its playful disposition. During the greater part of the day it was usually asleep, rolled up in the inner partition or box of its large cage : this indeed was invariably the case in the morning, unless purposely disturbed, but in the afternoon it would often voluntarily come out, traverse its cage, take food, and play with those to whom it was accustomed.—Clinging to the top wires of its cage with its hind-paws and tale, it would thus suspend itself, swinging backwards and forwards, and assuming a variety of antic positions. When thus hanging, it could bring up its body with the greatest ease, so as to cling with its fore-paws as well as the hind pair to the wires, and in this manner it would travel up and down its cage with the utmost address, every now and then thrusting forth its long tongue between the wires, as if in quest of food, which if offered outside its cage, it would generally endeavor to draw in with this organ. It was very fond of being stroked and gently scratched, and when at play with any one it knew, it would pretend to bite, seizing the hand or fingers with its teeth, as a dog will do when gambolling with its master, but without hurting or intending injury. As the

evening came on, its liveliness and restlessness would increase. It was then full of animation—traversing the space allotted to it in every direction—examining every object within its reach—rolling and tumbling about, and swinging to and fro from the wires of the cage : nor was its good-humor abated ; it would gambol and play with its keepers, and exhibit in every movement the most surprising energy. In this state of exercise it would pass the night, retiring to rest on the dawn of the morning. The age of this individual is not ascertained ; the state of its teeth, however, which are much worn down, shows it to have attained an advanced period ; its color was a pale yellowish grey, inclining to tawny ; the hairs, in certain lights, having a glossy appearance. Its dissection after death fully confirmed the propriety of assigning it a place among the plantigrade carnivora.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 104



The Oriole and its Nest.

ORIOLE.

PLATE XXXV.

Class—Aves. *Order*—Passeres: birds of passage. *Genus*—*Criolus*. *Species*—Baltimore and Orchard Oriole.

The following description of the Oriole is taken from Wilson's Ornithology.

THIS is a bird of passage, arriving from the South, about the beginning of May, and departing towards the latter end of August, or beginning of September. From the singularity of its colors, the construction of its nest, and its preferring the apple-trees, weeping-willows, walnut and tulip-trees, adjoining the farm-house, to build on, it is generally known, and, as usual, honored with a variety of names, such as Hang-nest, Hanging-bird, Golden Robin, Fire-bird (from the bright orange seen through the green leaves, resembling a flash of fire) &c., but more generally the Baltimore-bird, so named, as Catesby informs us, from its colors, which are black and orange, being those of the arms or livery of lord Baltimore, formerly proprietary of Maryland.

The Baltimore Oriole is seven inches in length; bill almost straight, strong, tapering to a sharp point, black, and sometimes lead colored above, the lower mandible light blue towards the base. Head, throat, upper part of the back and wings, black; lower part of the back, rump, and whole upper parts, a bright orange, deepening into vermillion on the breast; the black on the shoulders is also divided by a band of orange; exterior edges of the greater wing-coverts, as well as the edges of the secondaries, and part of those of the primaries, white; the tail feathers, under the coverts, orange; the two middle ones thence to the tips are black, the next five, on each side, black near the coverts, and orange toward the extremities, so disposed, that when the tail is expanded, and the coverts removed, the black appears in the form of a pyramid, supported

on an arch of orange, tail slightly forked, the exterior feather on each side a quarter of an inch shorter than the others ; legs and feet light blue or lead color ; iris of the eye hazel.

The female has the head, throat, upper part of the neck and back, of a dull black, each feather being skirted with olive yellow, lower part of the back, rump, upper tail-coverts, and whole lower parts, orange yellow, but much duller than that of the male ; the whole wing feathers are of a deep dirty brown, except the quills, which are exteriorly edged, and the greater wing-coverts, and next superior row, which are broadly tipped, with a dull yellowish white ; tail olive yellow ; in some specimens the two middle feathers have been found partly black, in others wholly so ; the black on the throat does not descend so far as in the male, is of a lighter tinge, and more irregular ; bill, legs and claws, light blue.

Almost the whole genus of Orioles belong to America, and with a few exceptions build pensile nests. Few of them, however, equal the Baltimore in the construction of these receptacles for their young, and in giving them, in such a superior degree, convenience, warmth and security. For these purposes he generally fixes on the high bending extremities of the branches, fastening strong strings of hemp or flax round two forked twigs, corresponding to the intended width of the nest ; with the same materials, mixed with quantities of loose tow, he interweaves or fabricates a strong firm kind of cloth, not unlike the substance of a hat in its raw state, forming it into a pouch of six or seven inches in depth, lining it substantially with various soft substances, well interwoven with the outward netting, and lastly, finishes with a layer of horse hair ; the whole being shaded from the sun and rain by a natural pent-house, or canopy of leaves. As to a hole being left in the side for the young to be fed, and void their excrements through, as Pennant and others relate, it is certainly an error : I have never met with any thing of the kind in the nest, of the Baltimore.

Though birds of the same species have, generally speaking, a common form of building, yet, contrary to the usually re-

ceived opinion, they do not build exactly in the same manner. As much difference will be found in the style, neatness, and finishing of the nests of the Baltimores, as in their voices.—Some appear far superior workmen to others; and probably age may improve them in this as it does in their colors. I have a number of their nests now before me, all completed, and with eggs. One of these, the neatest, is in the form of a cylinder, of five inches diameter, and seven inches in depth, rounded at bottom. The opening at top is narrowed, by a horizontal covering, to two inches and a half in diameter.—The materials are flax, hemp, tow, hair, and wool, woven into a complete cloth; the whole tightly sewed through and through with long horse hairs, several of which measure two feet in length. The bottom is composed of thick tufts of cow hair, sewed also with strong horse hair. This nest was hung on the extremity of the horizontal branch of an apple-tree, fronting the south-east; was visible one hundred yards off, though shaded by the sun; and was the work of a very beautiful and perfect bird. The eggs are five, white, slightly tinged with flesh color, marked on the greater end with purple dots, and on the other parts with long hair-like lines, intersecting each other in a variety of directions.

So solicitous is the Baltimore to procure proper materials for his nest, that, in the season of building, the women in the country are under the necessity of narrowly watching their thread that may chance to be out bleaching, and the farmer to secure his young grafts; as the Baltimore finding the former, and the strings which tie the latter, so well adapted for his purpose, frequently carries off both; or should the one be too heavy, and the other too firmly tied, he will tug at them a considerable time before he gives up the attempt.—Skeins of silk, and hanks of thread, have been often found, after the leaves were fallen, hanging round the Baltimore's nest; but so woven up, and entangled, as to be entirely irreclaimable. Before the introduction of Europeans, no such material could have been obtained here; but with the sagacity of a good architect, he has improved this circumstance to

his advantage ; and the strongest and best materials are uniformly found in those parts by which the whole is supported.

Their principal food consists of caterpillars, beetles and bugs, particularly one of a brilliant glossy green, fragments of which have been almost always found in their stomach, and sometimes these only.

The song of the Baltimore is a clear mellow whistle, repeated at short intervals as he gleans among the branches. There is in it a certain wild plaintiveness and *naivete*, extremely interesting. It is not uttered with the rapidity of the ferruginous thrush (*Turdus rufus*), and some other eminent songsters ; but with the pleasing tranquillity of a careless plough-boy, whistling merely for his own amusement. When alarmed by an approach to his nest, or any such circumstances, he makes a kind of rapid chirruping, very different from his usual note. This, however, is always succeeded by those mellow tones, which seem so congenial to his nature.

High on yon poplar, clad in glossiest green,
The orange, black-capp'd Baltimore is seen,
The broad extended boughs still please him best ;
Beneath their bending skirts he hangs his nest ;
There his sweet mate, secure from every harm,
Broods o'er her spotted store, and wraps them warm ;
Lists to the noontide hum of busy bees,
Her partner's mellow song, the brook, the breeze ;
These, day by day, the lonely hours deceive,
From dewy morn to slow descending eve.
Two weeks elaps'd, behold a helpless crew !
Claim all her care and her affection too ;
On wings of love th' assiduous nurses fly,
Flowers, leaves and boughs, abundant food supply ;
Glad chants their guardian as abroad he goes,
And waving breezes rock them to repose.

The Baltimore inhabits North America, from Canada to Mexico, and is even found as far South as Brazil. These birds are several years in receiving their complete plumage. Sometimes the whole tail of a mail individual, in spring, is yellow, sometimes only the two middle feathers are black, and frequently the black on the back is skirted with orange,

and the tail tipt with the same color. Three years, I have reason to believe, are necessary to fix the full tint of the plumage, and then the male bird appears as already described.

The males generally arrive several days before the females, saunter about their wonted places of residence, and seem lonely and less sprightly than after the arrival of their mates.

The chief difference between the male and female Baltimore Oriole, is the superior brightness of the orange color of the former to that of the latter. The black on the head, upper part of the back and throat of the female, is intermixed with dull orange ; whereas, in the male, those parts are of a deep shining black : the tail of the female also wants the greater part of the black, and the whole lower parts are of a much dusker orange.

There are no circumstances, relating to birds, which tend so much to render their history obscure and perplexing, as the various changes of color which many of them undergo. These changes are in some cases periodical, in others progressive ; and are frequently so extraordinary, that, unless the naturalist has resided for years in the country where the birds inhabit, and has examined them at almost every season, he is extremely liable to be mistaken and imposed on by their novel appearance. Numerous instances of this kind might be cited, from the pages of European writers, in which the same bird has been described two, three, and even four times, by the same person ; and each time as a different kind. The species we are now about to examine, is a remarkable example of this.

The female of the Orchard Oriole is six inches and-a-half in length, and eleven inches in extent ; the color above is a yellow olive, inclining to a brownish tint on the back ; the wings are dusky brown, lesser wing-coverts tipped with yellowish white, greater coverts and secondaries exteriorly edged with the same, primaries slightly so ; tail rounded at the extremity, the two exterior feathers three-quarters of an inch shorter than the middle ones ; whole lower parts yellow ; bill and legs light blue, the former bent a little, very sharp

pointed, and black towards the extremity ; iris of the eye hazel, pupil black. The young male of the first season corresponds nearly with the above description. But in the succeeding spring he makes his appearance with a large patch of black marking the front, lores and throat. In this stage, too, the black sometimes makes its appearance on the two middle feathers of the tail ; and slight stains of reddish are seen commencing on the sides and belly. The rest of the plumage as in the female. This continuing nearly the same on the same bird during the remainder of the season.

I have said that these birds construct their nests very different from the Baltimores. They are so particularly fond of frequenting orchards, that scarcely one orchard in summer is without them. They usually suspend their nest from the twigs of the apple tree ; and often from the extremities of the outward branches. It is formed exteriorly of a particular species of long, tough and flexible grass, knit or sewed through and through in a thousand directions, as if actually done with a needle. An old lady of my acquaintance, to whom I was one day showing this curious fabrication, after admiring its texture for some time, asked me in a tone between joke and earnest, whether I did not think it possible to learn these birds to darn stockings. This nest is hemispherical, three inches deep by four in breadth ; the concavity scarcely two inches deep by two in diameter. I had the curiosity to detach one of the fibres, or stalks, of dried grass from the nest, and found it to measure thirteen inches in length, and in that distance was thirty-four times hooked through and returned, winding round and round the nest ! The inside is usually composed of wool, or the light downy appendages attached to the seeds of the *Platanus occidentalis*, or button-wood, which form a very soft and commodious bed. Here and there the outward work is extended to an adjoining twig, round which it is strongly twisted, to give more stability to the whole, and prevent it from being upset by the wind.

When they choose the long pendent branches of the weeping-willow to build in, as they frequently do, the nest, though

formed of the same materials, is made much deeper, and of slighter texture. The circumference is marked out by a number of these pensile twigs, that descend on each side like ribs, supporting the whole; their thick foliage, at the same time, completely concealing the nest from view. The depth in this case is increased to four or five inches, and the whole is made much slighter. These long pendent branches, being sometimes twelve and even fifteen feet in length, have a large sweep in the wind, and render the first of these precautions necessary, to prevent the eggs or young from being thrown out; and the close shelter afforded by the remarkable thickness of the foliage is, no doubt, the cause of the latter.

The Orchard Oriole, though partly a dependent on the industry of the farmer, is no sneaking pilferer, but an open and truly beneficent friend. To all those countless multitudes of destructive bugs and caterpillars, that infest the fruit trees in spring and summer, preying on the leaves, blossoms and embryo of the fruit, he is a deadly enemy; devouring them wherever he can find them; and destroying, on an average, some hundreds of them every day; without offering the slightest injury to the fruit, however much it may stand in his way. I have witnessed instances where the entrance to his nest was more than half closed up by a cluster of apples, which he could have easily demolished in half a minute; but, as if holding the property of his patron sacred, or considering it as a natural bulwark to his own, he slid out and in with the greatest gentleness and caution. I am not sufficiently conversant in entomology to particularize the different species of insects on which he feeds; but I have good reason for believing that they are almost altogether such as commit the greatest depredation on the fruits of the orchard; and, as he visits us at a time when his services are of the greatest value, and, like a faithful guardian, takes up his station where the enemy is most to be expected, he ought to be held in respectful esteem, and protected by every considerate husbandman. Nor is the gayety of his song one of his least recommendations. Being an exceedingly active, sprightly and

restless bird, he is on the ground—on the trees,—flying and carolling in his hurried manner, in almost one and the same instant. His notes are shrill and lively, but uttered with such rapidity and seeming confusion, that the ear is unable to follow them distinctly. Between these he has a single note, which is agreeable and interesting. Wherever he is protected, he shows his confidence and gratitude by his numbers and familiarity. In the Botanic Garden of my worthy and scientific friends, the Messrs. Bartrams, of Kingsess,—which presents an epitome of almost every thing that is rare, useful, and beautiful in the vegetable kingdom of this western continent, and where the murderous gun scarce ever intrudes,—the Orchard Oriole revels without restraint, through thickets of aromatic flowers and blossoms; and, heedless of the busy gardener that labors below, hangs his nest, in perfect security, on the branches over his head.

The female sits fourteen days; the young remain in the nest ten days afterwards,* before they venture abroad, which is generally about the middle of June. Nests of this species, with eggs, are sometimes found so late as the twentieth of July, which must belong to birds that have lost their first nest; or it is probable that many of them raise two broods in the same season, though I am not positive of the fact.

The Orchard Orioles arrive rather later than the Baltimores, commonly about the first week in May; and extend as far as Maine. They are also more numerous towards the mountains than the latter species. In traversing the country near the Blue ridge, in the month of August, I have seen at least five of this species for one of the Baltimore. Early in September, they take their departure for the south; their term of residence here being little more than four months. Previous to their departure, the young birds become gregarious. They are easily raised from the nest, and soon become agreeable domestics. One which I reared and kept through the winter, whistled with great clearness and vivacity at two

* There is evidently some mistake here, as the young could hardly be fledged in ten days.

months old. It had an odd manner of moving its head and neck slowly and regularly, and in various directions, when intent on observing any thing, without stirring its body. This motion was as slow and regular as that of a snake. When at night a candle was brought into the room, it became restless, and evidently dissatisfied, fluttering about the cage as if seeking to get out ; but when the cage was placed on the same table with the candle, it seemed extremely well pleased, fed and drank, drest, shook, and arranged its plumage, sat as close to the light as possible, and sometimes chanted a few broken irregular notes in that situation, as I sat writing or reading beside it. I also kept a young female of the same nest, during the greatest part of winter, but could not observe in that time any change in its plumage.

THE LESSER RED-POLL.

PLATE XXXVI.

Class—Aves. *Order*—Passeres. *Genus*—Fringilla. *Species*—Linaria.

THIS bird corresponds so exactly in size, figure and color of plumage with that of Europe, of the same name, as to place their identity beyond a doubt. They inhabit during summer the most northern parts of Canada and still more remote northern countries, from whence they migrate at the commencement of winter. They appear in the Genesee country with the first deep snow, and on that account are usually called by the title of Snow-birds. As the female is destitute of the crimson on the breast and forehead, and the young birds do not receive that ornament till the succeeding spring, such a small proportion of the individuals that form these flocks are marked with red, as to induce a general belief among the inhabitants of those parts that they are two different kinds associated together. Flocks of these birds have been occasionally seen in severe winters in the neighborhood of Philadelphia. They seem particularly fond of the seeds of the common alder, and hang head downwards while feeding, in the manner of the yellow-bird. They seem extremely unsuspicious at such times, and will allow a very near approach without betraying any symptoms of alarm.

The specimen represented in the plate was shot, with several others of both sexes, in Seneca county, between the Seneca and Cayuga lakes. Some individuals were occasionally heard to chant a few interrupted notes, but no satisfactory account can be given of their powers of song.

This species extends throughout the whole northern parts of Europe, is likewise found in the remote wilds of Russia; was seen by Steller in Kamtschatka; and probably inhabits corresponding climates round the whole habitable parts of the

2.

1. The Lesser Red-Poll 2. Black-Poll Warbler



2209

northern hemisphere. In the highlands of Scotland they are common, building often on the tops of the heath, sometimes in a low furze bush, like the common linnet; and sometimes on the ground. The nest is formed of light stalks of dried grass, intermixed with tufts of wool, and warmly lined with feathers. The eggs are usually four, white, sprinkled with specks of reddish.

Contrary to the usual practice of Wilson, he omitted to furnish a *particular* description of this species, accompanying its figure. But this supplementary notice would not have been considered necessary, if our author had not fallen into a mistake respecting the markings of the female, and the young male; the former of which he describes as *destitute of the crimson on the forehead*; and the latter *not receiving that ornament till the succeeding spring*. When Wilson procured his specimens, it was in the autumn, previously to their receiving their perfect winter dress; and he was never afterwards aware of his error, owing to the circumstance of these birds seldom appearing in the neighborhood of Philadelphia. Since then, large flocks have been seen by persons who were within a few feet of them, as they were busily engaged in picking the seeds of some garden plants; and it can with confidence be asserted that they *all* had the red patch on the crown; but there were very few which had the red rump and breast; the young males, it is probable, are not thus marked until the spring; and the females are destitute of that ornament altogether.

The Lesser Red-poll is five inches and a quarter in length, and eight inches and a half in breadth; the bill is pale yellow, ridged above and below with dark horn color, the upper mandible projecting somewhat over the lower at the tip; irides dark hazel; the nostrils are covered with recumbent, hair-like feathers of drab color; a line of brown extends from the eyes, and encircles the base of the bill, forming in some specimens a patch below the chin; the crown is ornamented with a pretty large spot of deep shining crimson; the throat, breast, and rump, stained with the same, but of a more delicate red;

the belly is of a very pale ash, or dull white; the sides are streaked with dusky; the whole upper parts are brown or dusky, the plumage edged with yellowish white and pale ash, the latter most predominant near the rump; wings and tail dusky, the latter is forked, and consists of twelve feathers edged with white; the primaries are very slightly tipped and edged with white; the secondaries more so; the greater and lesser coverts are also tipped with white, forming the bars across the wings; thighs cinereous; legs and feet black; hind claw considerably hooked, and longer than the rest.

The female is less bright in her plumage above; and her under parts incline more to an ash color; the spot on her crown is of a golden crimson, or reddish saffron.

One male specimen was considerably larger than the rest; it measured five inches and three-quarters in length, and nine inches and a quarter in breath; the breast and rump were tawny; its claws were uncommonly long, the hind one measured nearly three-eighths of an inch; and the spot on the crown was of a darker hue than that of the rest.

The call of this bird exactly resembles that of the *Fringilla tristis*, or common yellow-bird of Pennsylvania.

The Red-polls linger in the neighborhood of Philadelphia until about the middle of April; but whither they retire for the business of incubation we cannot determine.

BLACK-POLL WARBLER.

PLATE XXXVI.

Class—Aves. *Order*—Passeres : birds of passage. *Genus*—*Sylvia* : warbler. *Species*—Striatee.

THIS species has considerable affinity to the Flycatchers in its habits. It is chiefly confined to the woods, and even there, to the tops of the tallest trees, where it is described skipping from branch to branch in pursuit of winged insects. Its note is a single *screeep*, scarcely audible from below. It arrives in Pennsylvania about the twentieth of April, and is first seen on the tops of the highest maples, darting about among the blossoms. As the woods thicken with leaves, it may be found pretty generally, being none of the least numerous of our summer birds. It is, however, most partial to woods in the immediate neighborhood of creeks, swamps, or morasses, probably from the greater number of its favorite insects frequenting such places. It is also pretty generally diffused over the United States, having myself met with it in most quarters of the Union ; though its nest has hitherto defied all my researches.

This bird may be considered as occupying an intermediate station between the Flycatchers and the Warblers ; having the manners of the former, and the bill, partially, of the latter. The nice gradations by which Nature passes from one species to another, even in this department of the great chain of beings, will forever baffle all the artificial rules and systems of man. And this truth every fresh discovery must impress more forcibly on the mind of the observing naturalist. These birds leave us early in September.

The Black-poll Warbler is five and a half inches long, and eight and a half in extent ; crown and hind head black ; cheeks pure white ; from each lower mandible runs a streak of small black spots, those on the side larger ; the rest of the

lower parts white ; primaries black, edged with yellow ; rest of the wing black, edged with ash ; the first and second row of coverts broadly tipped with white ; back ash, tinged with yellow ochre, and streaked laterally with black ; tail black, edged with ash, the three exterior feathers marked on the inner webs with white ; bill black above, whitish below, furnished with bristles at the base ; iris hazel ; legs and feet reddish yellow.

The female differs very little in plumage from the male.

Pennant, who describes this species, says that it inhabits during summer Newfoundland and New-York, and is called in the last *Sailor*. This name, for which however no reason is given, must be very local, as the bird itself is one of those silent, shy and solitary individuals that seek the deep retreats of the forest, and are known to few or none but the naturalist.

Length of the female Black-cap five inches and a quarter, extent eight and a quarter ; bill brownish black ; crown yellow olive, streaked with black ; back the same, mixed with some pale slate ; wings dusky brown, edged with olive ; first and second wing-coverts tipped with white ; tertials edged with yellowish white ; tale-coverts pale gray ; tail dusky, forked, the two exterior feathers marked on their inner vanes with a spot of white ; round the eye is a whitish ring ; cheeks and sides of the breast tinged with yellow, and slightly spotted with black ; chin white, as are also the belly and vent ; legs and feet dirty orange.

The young bird of the first season, and the female, as is usually the case, are very much alike in plumage. On their arrival early in April, the black feathers on the crown are frequently seen coming out, intermixed with the former ash-colored ones.

ROOSTING PLACES OF WILD PIGEONS.

[See page 59, Vol. II.]

WHEN these roosts are first discovered, the inhabitants from considerable distances visit them in the night, with guns, clubs, long poles, pots of sulphur, and various other engines of destruction. In a few hours they fill many sacks, and load their horses with them. Not far from Shelbyville in the state of Kentucky, some years ago, there was one of these breeding places, which stretched through the woods in nearly a north and south direction, was several miles in breadth, and was said to be upwards of forty miles in extent! In this tract almost every tree was furnished with nests, wherever the branches could accommodate them. The Pigeons made their first appearance there about the tenth of April, and left it altogether, with their young, before the 25th of May.

As soon as the young were fully grown, and before they left their nests, numerous parties of the inhabitants, from all parts of the adjacent country, came with wagons, axes, beds, cooking utensils, many of them accompanied by the greater part of their families, and encamped for several days at this immense nursery. Several of them informed me, that the noise in the woods was so great as to terrify their horses, and that it was difficult for one person to hear another speak without bawling in his ear. The ground was strewn with broken limbs of trees, eggs, and squab Pigeons, which had been precipitated from above, and on which herds of hogs were fattening. Hawks, buzzards, and eagles, were sailing about in great numbers, and seizing the squabs from their nests at pleasure; while from twenty feet upwards to the tops of the trees, the view through the woods presented a perpetual tumult of crowding and fluttering multitudes of Pigeons, their wings roaring like thunder; mingled with the frequent crash of falling timber; for now the axe-men were at work cutting down those trees that seemed to be most crowded with nests; and contrived to fell them in a such a manner, that in their

descent they might bring down several others ; by which means the falling of one large tree sometimes produce two hundred squabs, little inferior in size to the old ones, and almost one mass of fat.

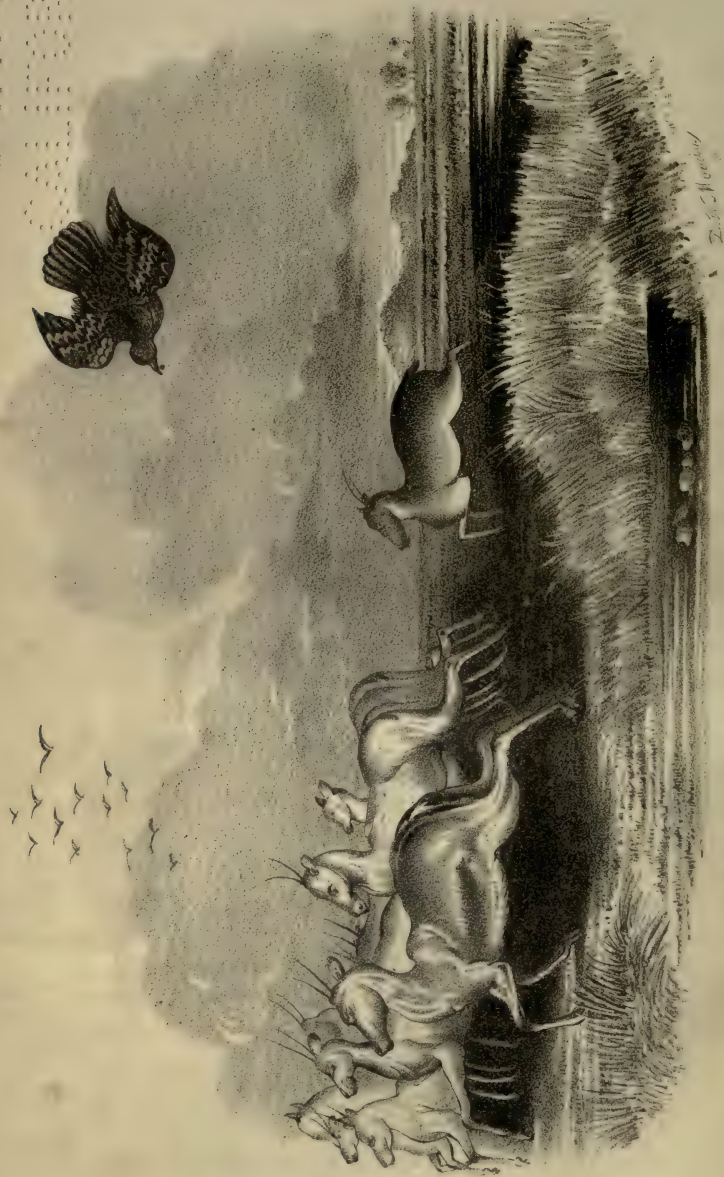
In many instances, I counted upwards of ninety nests on a single tree ; but the Pigeons had abandoned this place for another, sixty or eighty miles off, towards Green river, where they were said at that time to be equally numerous. From the great numbers that were constantly passing over head, to or from that quarter, I had no doubt of the truth of this statement. The mast had been chiefly consumed in Kentucky, and the Pigeons, every morning, a little before sun-rise, set out for the Indiana territory, the nearest part of which was about sixty miles distant. Many of these returned before ten o'clock, and the great body generally appeared on their return a little after noon. I had left the public road, to visit the remains of the breeding place near Shelbyville, and was traversing the woods with my gun, in my way to Frankfort, when about one o'clock the Pigeons, which I had observed flying the greater part of the morning northerly, began to return in such immense numbers as I never before had witnessed.—Curious to determine how long this appearance would continue, I took out my watch to note the time, and sat down to observe them. It was then half-past one. I sat for more than an hour, but instead of a diminution of this prodigious procession, it seemed rather to increase both in numbers and rapidity ; and, anxious to reach Frankfort before night, I rose and went on. About four o'clock in the afternoon, I crossed the Kentucky river, at the town of Frankfort, at which time the living torrent above my head seemed as numerous and as extensive as ever. Long after this I observed them, in large bodies that continued to pass for six or eight minutes, and these again were followed by other detached bodies, all moving in the same south-east direction, till after six in the evening. The great breadth of front which this mighty multitude preserved, would seem to intimate a corresponding breadth of their breeding place, which by several gentlemen who had lately passed through part of it, was stated to me at *several* miles.

It is universally asserted in the western countries, that the Pigeons, though they have only one young at a time, breed thrice, and sometimes four times, in the same season ; the circumstances already mentioned render this highly probable. It is also worthy of observation, that this takes place during that period when acorns, beech nuts, &c., are scattered about in the greatest abundance, and mellowed by the frost. But they are not confined to these alone ; buckwheat, hempseed, Indian corn, holly berries, hack berries, huckle berries, and many others furnish them with abundance at almost all seasons. The acorns of the live oak are also eagerly sought after by these birds, and rice has been frequently found in individuals killed many hundred miles to the northward of the nearest rice plantation. The vast quantity of mast which these multitudes consume, is a serious loss to the bears, pigs, squirrels and other dependents on the fruits of the forest. I have taken from the crop of a single Wild Pigeon, a good handful of the kernels of beech nuts, intermixed with acorns and chestnuts. To form a rough estimate of the daily consumption of one of these immense flocks, let us first attempt to calculate the numbers of that above mentioned, as seen in passing between Frankfort and the Indiana territory. If we suppose this column to have been one mile in breadth (and I believe it to have been much more,) and that it moved at the rate of one mile in a minute ; four hours, the time that it continued passing, would make its whole length two hundred and forty miles. Again, supposing that each square yard of this moving body comprehended three Pigeons, the square yards in the whole space, multiplied by three, would give two thousand two hundred and thirty millions, two hundred and seventy-two thousand Pigeons ! An almost inconceivable multitude, and yet probably far below the actual amount. Computing each of these to consume half a pint of mast daily, the whole quantity at this rate, would equal seventeen millions four hundred and twenty-four thousand bushels per day !

A few observations on the mode of flight of these birds

must not be omitted. The appearance of large detached bodies of them in the air, and the various evolutions they display, are strikingly picturesque and interesting. In descending the Ohio, by myself, in the month of February, I often rested on my oars to contemplate their aerial manœuvres. A column, eight or ten miles in length, would appear from Kentucky, high in air, steering across to Indiana. The leaders of this great body would sometimes gradually vary their course, until it formed a large bend of more than a mile in diameter, those behind tracing the exact route of their predecessors. This would continue sometimes long after both extremities were beyond the reach of sight, so that the whole, with its glittery undulations, marked a space on the face of the heavens resembling the windings of a vast and majestic river. When this bend became very great, the birds, as if sensible of the unnecessary circuitous course they were taking, suddenly changed their direction, so that what was in column before became an immense front, straightening all its indentures, until it swept the heavens in one vast and infinitely extended line. Other lesser bodies also united with each other, as they happened to approach, with such ease and elegance of evolution, forming new figures, and varying these as they united or separated, that I was never tired of contemplating them. Sometimes a hawk would make a sweep on a particular part of the column, from a great height, when almost as quick as lightning, that part shot downwards out of the common track, but soon rising again, continued advancing at the same height as before; this inflection was continued by those behind, who on arriving at this point, dived down, almost perpendicularly, to a great depth, and rising followed the exact path of those that went before.

[illegible]



Horses pursued by an Eagle.

THE LLAMA.

PLATE XXXVII.

Class—Mammalia. *Order*—Ruminantia : chewing the cud.
—*Genus*—Camelus. *Species*—Various.

As almost all the quadrupeds of America are smaller than the resembling ones of the ancient continent, so the Llama, which may be considered as the camel of the new world, is every way less than that of the old. This animal stands high upon its legs, has a long neck, a small head, and resembles the camel, not only in its natural mildness, but its aptitude for servitude, its moderation, and its patience. The Americans early found out its useful qualities, and availed themselves of its labors : like the camel, it serves to carry goods over places inaccessible to other beasts of burden ; like that, it is obedient to its driver ; and often dies under, but never resists, his cruelty.

It is very singular that, although the Llama and the Paco are domesticated in Peru, Mexico, and Chili, as the horse is in Europe, or the camel in Arabia, we scarcely know any thing of them. Peru, according to Gregory de Bolivar, is the true and native country of the Llamas ; they are conducted into other provinces, as New Spain, &c., but this is rather for curiosity than utility ; but in Peru, from Potosi to Caracas, these animals are in great numbers, and make the chief riches of the Indians and Spaniards, who rear them. Their flesh is excellent food ; their hair, or rather wool, may be spun into beautiful clothing ; and they are capable of carrying heavy loads in the most rugged and dangerous ways ; the strongest of them will travel with two hundred or two hundred and fifty pounds weight on their backs ; their pace is but slow, and their journey is seldom above fifteen miles a day ; but then they are sure, and descend precipices, and find footing

among the most craggy rocks, where even men can scarcely accompany them ; they commonly travel for five days together, when they are obliged to rest, which they do, of their own accord, for two or three days. They are chiefly employed in carrying the riches of the mines of Potosi. Bolivar affirms that, in his time, above three hundred thousand of these animals were in actual employ.

The growth of the Llama is very quick : and its life is of but short duration. This animal couples so early as at three years of age, and remains strong and vigorous till twelve ; after which it begins to decline, and becomes entirely useless at fifteen. Their nature appears modelled on that of the Americans. They are gentle and phlegmatic, and do every thing with the greatest leisure and caution. When they stop on their journeys, they bend their knees very cautiously, in order to lower their bodies without disordering their load. As soon as they hear their driver whistle, they rise up again with the same precaution, and proceed on their journey ; they feed as they go along, on the grass they meet with in their way, but never eat in the night, making use of that time to ruminate. The Llama sleeps, like the camel, with its feet folded under its belly, and ruminates in that posture. When overloaded or fatigued, it falls on its belly, and will not rise, though its driver strike it with his utmost force.

The Llama is about four feet high ; its body, comprehending the neck and head, is five or six feet long ; its neck alone is near three feet. The head is small and well proportioned, the eyes large, the nose somewhat long, the lips thick, the upper divided, and the lower a little depending : it wants the incisive and canine teeth in the upper jaw. The ears are four inches long, and move with great agility. The tail is seldom above eight inches long, small, straight, and a little turned up at the end. It is cloven-footed, like the ox ; but the hoof has a kind of spear-like appendage behind, which assists the animal to move and support itself over precipices and rugged ways. The back is clothed with a short wool, as is the crupper and tail ; but it is very long on the belly and

sides. These animals differ in color ; some are white, others black, but most of them brown.

These useful, and even necessary animals, are attended with no expense to their masters ; for, as they are cloven-footed, they do not require to be shod, nor do they require to be housed, as their wool supplies them with a warm covering. Satisfied with a small portion of vegetables and grass, they want neither corn nor hay to subsist them ; they are still more moderate in what they drink, as their mouths are continually moistened with saliva, which they have in a greater quantity than any other animal. The natives hunt the *Guanacos*, or wild Llama, for the sake of its fleece. The dogs have much trouble to follow them ; and, if they do not come up with them before they gain the rocks, both the hunters and dogs are obliged to desist in their pursuit.

The Pacos are a subordinate kind to the Llamas, much in the same proportion as the ass is to the horse ; they are smaller, and not so serviceable ; but their fleece is more useful : their wool is fine and long, and is a sort of merchandize, as valuable as silk. The natural color of the Pacos is that of a dried rose-leaf, which is so fixed that it undergoes no alteration under the hands of the manufacturers. They not only make good gloves and stockings of this wool, but also form it into quilts and carpets, which bring a higher price, and exceed those of the Levant.

The Pacos also resemble the Llamas in their form, excepting that their legs are shorter, and their muzzle thicker and closer. They inhabit and climb over the highest parts of the mountains. The snow and ice seem rather agreeable than inconvenient to them. When wild, they keep together in flocks, and run very swift ; and, as soon as they perceive a stranger, they take flight, driving their young before them. The ancient monarchs of Peru rigorously prohibited the hunting of them, as they multiply but slowly ; but, since the arrival of the Spaniards in these parts, their number is greatly decreased, so that at present there are very few remaining. The flesh of these animals is not so good as that of the

Guanacos; and they are only sought after for their fleecce, and the bezoar they produce. The method of taking them proves their extreme timidity, or rather their weakness. The hunters having driven the flock into a narrow passage, across which they have stretched a rope about four feet from the ground, with a number of pieces of linen or cloth hanging on it, the animals are so intimidated at these rags agitated by the wind, that they stop, and, crowding together in a heap, the hunters kill great numbers of them with the greatest ease; but if there are any Guanacos among the flock, which are less timid than the Pacos, they leap over the rope with great agility. The example is immediately followed by the whole flock, and they escape the stratagem of their pursuers.

With respect to the domestic Pacos, they are used to carry burdens, like the Llamas; but, being smaller and weaker, they carry much less weight. They are likewise of a more stubborn nature; and, when once they rest with their load, they will suffer themselves to be cut to pieces sooner than rise. The Indians have never made use of the milk of these animals, as they have scarcely enough to supply their own young. The great profit derived from their wool has induced the Spaniards to endeavor to naturalize them in Europe: they have transported them into Spain, in hopes to raise the breed in that country; but, the climate not agreeing with their nature, not one of them lived. We are, nevertheless, persuaded that these animals, which are more valuable than the Llamas, might thrive upon our mountains, especially upon the Pyrenean. Those who brought them into Spain did not consider that they can exist, even in Peru, only in the cold regions; that is, on the top of the highest mountains; that they are never to be found in the valleys, and die if brought into hot countries; that consequently, in order to preserve them, they should be landed, not in Spain, but in Scotland, and even in Norway, and with greater certainty at the foot of the Pyrenean, Alpine, or other mountains, where they might climb and attain to the region that most agrees with their nature.

The Llama is in general a timid and docile animal. If teased or ill treated, however, they become spiteful. Their mode of manifesting their anger is singular: it consists in darting their saliva in considerable quantity upon the person who offends them. They will cover it with a surface of three or four yards in extent.

The Vicuna, the wool of which is very valuable, is smaller than the Llama; its limbs are more neatly formed, and it has no protuberance on the breast. It is of a reddish brown on the upper part of the body, and whitish on the lower.

“The Llamas (says the author of the Menageries) form a secondary group of camels, offering to the eye of the naturalist very small anatomical differences of construction from that of the camel, properly so called. The foot of the Llama is not, like that of the camel, covered with an elastic sole, which joins the two toes. From the absence of this entire sole, the species of South America is enabled to climb the precipices of the Andes, which are its native region, the toes having strong nails, each of which has a thick cushion, or pad, below. The Llama also wants the second canine tooth in the lower jaw; but this difference is not, by some, considered such as to require a separation of the genus—for deer, of various species, have the same deviation from the general type. Again, the absence of the hump in the Llama species is not an anatomical difference which constitutes a character; for, as the skeleton of the Bactrian camel with two humps does not differ from that of the Arabian with one, so does the bones of the arrangement of the Llama agree precisely with the conformation of the camel. The zebu is an ox, although he has a hump. The ears of the Llama are longer, and the tail is shorter, than those of the camel. The similarities which determine the genus to which the camels and the Llamas belong, are principally these:—1. Each species has very remarkable peculiarities connected with the economy of their reproduction, in which they differ from all other animals. 2. The camel and the Llama differ also from every other species of the class of ruminating animals, in the want of horns, and in having two large incisive teeth on each side of the upper

jaw. 3. The stomachs of the camel and the Llama are, in some degree, similarly constructed. Father Feuillee has described the stomach of the Llama ; and maintains that it has not only a large reservoir for carrying water, but that, like the stomach of the camel, it has the same machinery for allowing the separation of solid from liquid aliment. Sir Everard Home, however, describes this portion of the Llama's stomach as only partially resembling that of the camel. He says, "the stomach has a portion of it, as it were, intended to resemble the reservoirs for water in the camel ; but these have no depths, are only superficial cells, and have no muscular apparatus to close their mouths ; and allow the solid food to pass into the fourth cavity, or truly digesting stomach, without going into these cells." But that the Llama has an internal mechanism for retaining water, or secreting a liquid substance, is certain ; for, on the summit of the Andes, they are far above any lakes ; and it has been observed that, in a state of domestication, they never exhibit a desire to drink whilst they can obtain green pasture. 4. The Llama, according to Molina, has a conformation resembling the camel's hump, being provided with an excess of nutritive matter, which lies in a thick bed of fat under the skin, and is absorbed as a compensation for an occasional want of food. These remarkable similarities certainly warrant naturalists in classing the camel and the Llama in the same genus, although they differ both in size and form. They are each evidently fitted by nature for the endurance of great hardships and privations—the one amidst the sands of the desert, under a burning sun—the other on the wastes of some of the loftiest mountains of the world, with a region of perpetual snow above them. The slight variations in their conformation, such as that of the foot, are modifications of nature which fit them for their respective localities. A habitation among the rocks would be mechanically impossible for the camel ; whilst the burning plains would be as little suited to the Llama. But each is adapted to exist in a very arid and sterile region ; and their habits are created by their peculiar organization."

1 1 1 1
2 2 2 2
3 3 3 3
4 4 4 4
5 5 5 5
6 6 6 6
7 7 7 7
8 8 8 8
9 9 9 9
10 10 10 10
11 11 11 11
12 12 12 12
13 13 13 13
14 14 14 14
15 15 15 15
16 16 16 16
17 17 17 17
18 18 18 18
19 19 19 19
20 20 20 20
21 21 21 21
22 22 22 22
23 23 23 23
24 24 24 24
25 25 25 25
26 26 26 26
27 27 27 27
28 28 28 28
29 29 29 29
30 30 30 30
31 31 31 31
32 32 32 32
33 33 33 33
34 34 34 34
35 35 35 35
36 36 36 36
37 37 37 37
38 38 38 38
39 39 39 39
40 40 40 40
41 41 41 41
42 42 42 42
43 43 43 43
44 44 44 44
45 45 45 45
46 46 46 46
47 47 47 47
48 48 48 48
49 49 49 49
50 50 50 50
51 51 51 51
52 52 52 52
53 53 53 53
54 54 54 54
55 55 55 55
56 56 56 56
57 57 57 57
58 58 58 58
59 59 59 59
60 60 60 60
61 61 61 61
62 62 62 62
63 63 63 63
64 64 64 64
65 65 65 65
66 66 66 66
67 67 67 67
68 68 68 68
69 69 69 69
70 70 70 70
71 71 71 71
72 72 72 72
73 73 73 73
74 74 74 74
75 75 75 75
76 76 76 76
77 77 77 77
78 78 78 78
79 79 79 79
80 80 80 80
81 81 81 81
82 82 82 82
83 83 83 83
84 84 84 84
85 85 85 85
86 86 86 86
87 87 87 87
88 88 88 88
89 89 89 89
90 90 90 90
91 91 91 91
92 92 92 92
93 93 93 93
94 94 94 94
95 95 95 95
96 96 96 96
97 97 97 97
98 98 98 98
99 99 99 99
100 100 100 100



The Capybara.

THE COIPUS.

PLATE XXXVIII.

Class—Mammalia. *Order*—Rodentia : knawing. *Genus*
—Coipus. *Species*—Myopotamus.

THE *Couia*, or *Coipus*, is a most important animal in a commercial point of view. The fine under-fur which invests its body being extensively employed, like that of the beaver, in the manufacture of hats, thousands of its skins are annually imported into Europe, under the name of *racoonda*, and have for nearly forty years supplied the markets, while the animal itself remained unknown to the scientific world. The Coipus belongs to the rodent order, and constitutes the sole example of a genus allied in some respects to that of the beaver, yet differing from it in many external as well as anatomical characters ;—while at the same time it is no less evidently allied to the genera *hydromys* and *ondatra*.

Though unnoticed till very lately by naturalists, we are not to suppose that the older writers have left us no traces of its history ; on the contrary, we have clear references to it. Until Geoffroy St. Hilaire however published a memoir of the animal in 1805, these references had been overlooked or disregarded. Commerson had even figured it, but to that figure no attention was paid, till in looking over the vast collection of skins in the storehouses of M. Bechem, a furrier at Paris, Geoffroy St. Hilaire was struck with the resemblance which the skins of this animal bore to the figure in question. Of these skins M. Bechem never received less than 1000, and often from 15 to 20,000 annually, and had long been in the habit of employing the fur for the same purpose as that of the beaver, having observed the similarity of texture between them.

Commerson, who was a naturalist of great eminence, appears to have understood very clearly the systematic affinities of the Coipus : he regarded it with justice as the type of a

new genus, to which he gave the title of *myopotamus*, the animal being designated as *myopotamus bonariensis*, the specific name bearing allusion to the country where it came under his observation, viz : the province of Buenos Ayres.—Long, however, before Commerson, the Coipus was described both by Molina and afterwards by Don Felix d'Azzara.

Though M. St. Hilaire published his Memoir in 1809, the attention of British naturalists does not appear to have been directed to the animal in question till long afterwards ; nor was it really known to them, for, in 1812, we find an account of it in the Transactions of the Linnæan Society, under the name of the *mus castorides*, without any reference to St. Hilaire or other authorities. Mr. Burrow adds, "The person who first possessed the animal in this country states that he bought it on board a ship from the Brazils : I had afterwards frequent opportunities of observing it, and of making my drawing while it was alive at Exeter 'Change. It died suddenly, and without any apparent cause, and is now in the collection of Mr. Bullock. When teased or disturbed, it uttered a weak cry, but was good-tempered and not easily roused to resistance. The method of feeding was the same with that of most the glires, but the forepart of the body was very little raised."

Such is a summary of the scientific records of the Coipus or Coypou. The Coipus is a native of the southern and meridional regions of the American Continent. It resides habitually in burrows or holes which it excavates along the banks of the larger rivers, and in these burrows the female brings forth her young, from five to seven in number, to which she manifests great attachment, taking them with her as soon as sufficiently grown to follow her in her rambles. Every point in the configuration of this animal indicates its aquatic habits, as well as its facility of burrowing.

The body is clothed with two sorts of hair, an under garment of fine close fur, almost water-proof, and an upper layer of long, shining, straight hairs of rich brown, which is the general color, except on the muzzle, which is a dirty white.—

The head is large, thick, and depressed on the top, the eyes being small, and placed so as to be above the water while the animal is swimming, and approximating to each other; the ears are small and rounded, the moustaches long and wiry, the incisor teeth large, strong, and of a fine orange yellow. Posterior to the upper incisors there is a hairy palate, or space, which makes it seem as if those teeth pierced the upper lip; the fact is, that this hairy anterior palate is thus constructed in order that the incisors, which both above and below are always exposed, may work freely on rough bark or hard materials, without injury to the palate, or that rough sticks or pieces of wood may be grasped between the palate and lower incisors and carried to the burrow.

The anterior limbs are short, but very strong; the toes are five on each foot, armed with strong nails; the posterior feet are large and spreading; the toes are five in number, armed, as those of the fore-feet, with large claws; but with the exception of the outer toe, which is free, the rest are connected together by extensive webs. The tail is long, round, scaly, and very thinly clothed with stiff hairs. In size, the Coipus is smaller than the beaver, but considerably larger than the *ondatra*, or musquash, of the northern regions of America; having the head and body about one foot eleven inches in length, that of the tail being one foot three inches.

Both Molina and Azzara notice the gentleness and inoffensive habits of the Coipus, and the attachment which it manifests in captivity to those who feed and caress it. It is easily domesticated, and never resents ill usage. It utters no noise unless when hurt; its voice then consists of a piercing cry. We have ascertained, by dissection, that the larynx, or rather the glottis, is received into the posterior nares, which are continued backward in the form of a funnel-like cavity; so that breathing is carried on solely through the nostrils,—a point of great importance to an animal of aquatic habits, whose under jaw and exposed teeth are beneath the surface of the water while in the act of swimming, the nostrils being just elevated above. Such a structural arrangement, however, of

the larynx, precludes the utterance of definite tones, or any modulation of voice, a shrill cry being the utmost that might be expected.

Much yet remains for investigation connected with the habits of this remarkable animal in its native regions. Multitudes are annually destroyed,—thousands of skins are annually imported into Europe,—but no accounts connected with the details of the history of the Coipus have, as far as we know, been transmitted with them.

In captivity the Coipus is gentle and inoffensive. The individual which came under our notice, says a writer, allowed itself to be handled and played with, and was evidently pleased with any marks of attention from those from whom it received its food, and with whom it was familiar. At the same time it exhibited but little intelligence: its movements were sluggish; there was nothing lively in its appearance or actions. It reminded one of a huge overgrown water-rat, divested of the alacrity which that animal displays on the banks of our ponds and rivers. Its time seemed divided between sleep or repose, and feeding; and twilight or night appeared the season of its natural activity. We must not however judge of an animal altogether by its manners in captivity. Free, and in its native regions, it is perhaps alert and watchful, quick to perceive and prompt to escape the approach of its natural enemies; while in the exercise of its instincts it fulfils its appointed part in the great plan of creation.



Trogon.

THE TROGONS.

PLATE XXXIX.

Class—Aves. *Order*—Scansoriæ: climbing birds. *Genus*—Trogon. *Species*—Various. There are some ten or twelve species already known.

THE Trogons constitute a family of birds, the members of which are peculiar to the hotter regions of America, and of India, and its adjacent islands, Ceylon, Java, Sumatra, &c., one species only having as yet been discovered in Africa.—Among the most conspicuous of the feathered tribes for beauty and brilliancy of plumage, the Trogons stand confessedly pre-eminent. The metallic golden green of some species is of dazzling effulgence; in others less gorgeous: the delicate pencillings of the plumage, and the contrasted hues of deep scarlet, black, green and brown, produce a rich and beautiful effect. Nor is their shape and contour unworthy of their dress: were they far less elegantly arrayed they would still be pleasing birds.

It is difficult to convey the idea of a bird, or indeed of any natural object, by description solely: the engraving, however, will render the details connected with the family features of the present group easily intelligible.

The Trogons are *zygodactyle*, that is, they have their toes in pairs, two before and two behind, like parrots and wood-peckers; the *tarsi* are short and feeble, the beak is stout, and the gape wide; the general contour of the body is full and round, and the head large; the plumage is dense, soft, and deep; the wings are short but pointed, the quill-feathers being rigid; the tail is long, ample, and graduated, its outer feathers decreasing in length; in some species, and especially in that brilliant bird the Resplendent Trogon (*trogons resplendens*, Gould), the tail-coverts are greatly elongated, so as to form a beautiful pendent plumage of loose wavy feathers.

Of solitary habits, the Trogons (or *coroucui*) frequent the most secluded portions of dense forests, remote from the abodes of man. For hours together they sit motionless on some branch, uttering occasionally a plaintive melancholy cry, especially while the female is brooding on her eggs. Indifferent during the day to every object, listless or slumbering on their perch, they take no notice of the presence of an intruder, and may indeed be often so closely approached as to be knocked down by a stick ; the bright glare of the sun obscures their sight, and they wait for evening, the dusk of twilight being their season of activity.

Fruits, insects and their larvæ, constitute their food.—Formed, most of them at least, for rapid but not protracted flight, they watch from their perch the insects flitting by, and dart after them with surprising velocity, returning after their short chase to the same point of observation. Some, however, are almost exclusively frugivorous ; we allude more especially to those whose flowing plumes impede the freedom of their flight ; such seek for fruits and berries. Many species are certainly migratory. M. Natterer observes, respecting the Pavonine Trogon (*trogon pavoninus*), which inhabits, during a certain season of the year, the high woods along the upper part of the Amazon and Rio Negro, that he found the contents of its stomach to consist principally of the fruit of a certain species of palm, and that it arrives in those districts when its favorite food is ripe, but that when the trees no longer yield an adequate supply it retires to other districts.

Like the parrots and woodpeckers, the Trogons breed in the hollows of decayed trees, the eggs being deposited on a bed of wood-dust, the work of insects ; they are three or four in number, and white. The young, when first hatched, are totally destitute of feathers, which do not begin to make their appearance for two or three days ; and their head and beak appear to be disproportionately large. They are said to rear two broods in the year.

Azara, speaking of the Surucua Trogon, a native of Paraguay and the Brazils, informs us that it is seen only in the

largest woods, and that it "generally remains on the upper portions of the trees, without descending to the lower branches or to the earth ; it sits a long time motionless, watching for insects which may pass within its reach, and which it seizes with adroitness ; it is not gregarious, but dwells either in solitude or in pairs ; its flight, which is rapid and performed in vertical undulations, is not prolonged. These birds are so tame as to admit of a near approach ; I have seen them killed with a stick. They do not migrate, and are never heard except in the breeding season ; their note then consists of the frequent repetition of the syllables *pee-o*, in a strong, sonorous and melancholy voice ; the male and female answer each other. They form their nest on the trees, by digging into the lower part of the nest of a species of ant, known by the name of *cupiy*, until they have made a cavity sufficiently large, in which the female deposits her eggs, of a white color, and two, or as some assert, four in number. I have seen the male clinging to a tree after the manner of woodpeckers, occupied in digging a nest with its beak, while the female remained tranquil on a neighboring tree."

The American Trogons have their beak of moderate size, with serrated (or saw-like) edges, and furnished at its base with bristles ; the upper surface (of the males at least) is of a rich metallic green, the under parts being more or less universally scarlet or rich yellow. The outer tail-feathers in the majority of the species are more or less barred with black and white.

In the Indian Trogons the beak is larger and stouter, with smooth edges, having a tooth near the tip of the upper mandible. The eyes are encircled by a large bare space of richly colored skin ; the upper surface is brown, the lower more or less scarlet, and the outer tail-feathers exhibit no tendency towards a barred style of marking, excepting in one species, Diard's Trogon, in which the three outer tail-feathers are finely powdered with black.

The African species (*trogon narina*), closely approximates to its American relatives ; but its three outer tail-feathers are

unbarred. This species inhabits the dense forests of Caffraria; during the day it sits motionless on a low dead branch, and it is only in the morning and evening that it displays activity. Locusts and other insects are its principal food.

Of all the Trogons none are so magnificent as the *trogons resplendens*, lately introduced to the knowledge of the scientific world, as a distinct species by Mr. Gould, and admirably figured in his splendid 'Monograph' of the family *trogonidæ*. This bird, as stated by Mr. Gould, "is to be found only in the dense and gloomy forests of the Southern States of Mexico." Little known to Europeans, except within the last few years, the brilliant plumes which fall over the tail (and which, as is the whole of the upper surface of the body of this bird, are of the richest metallic golden green) were made use of by the ancient Mexicans, as ornaments on their head-dresses; and gorgeous must a head-dress be, composed of such feathers—soft, flowing, of dazzling lustre, and three feet in length. In later times they have occasionally been transmitted as curiosities to Europe. Mr. Gould observes that M. Temminck is the first who figured the present species; but that celebrated naturalist confounded it with the *trogon pavoninus* of Dr. Spix, a Brazilian species to which it is nearly allied, but from which it differs in having a soft silky crest, of long full feathers, and the plumes of the tail-coverts extremely long, whereas in the Pavonine Trogon there is no crest, and the tail-coverts do not extend above an inch or two at most beyond the tail.

Of the New World Trogons, those of Mexico possess in the length of the tail (at least in many instances) a feature distinguishing them from all their congeners; as an example in point we may refer to the *trogon elegans* (Gould), a new species, together with the *trogon resplendens* from Guatemala, a country rich in zoological stores, and constantly affording new treasures for the contemplation and study of the naturalist.

No group of birds affords a clearer proof than the *trogonidæ* of the rapid advancement of ornithological knowledge, and

of the great researches which have been made in this department of natural history. In the time of Linnæus, who enumerates only three species, the existence of these birds in India and Africa was not known. Levaillant added the *Narina*; and of late years, Vieillot, Spix, Temminck, and Swainson, have each contributed to enlarge the catalogue.

THE KING-BIRD.

PLATE XL.

Class—Aves. *Order*—Passeres : birds of passage. *Genus*—Muscicapa : flycatcher. *Species*—Are sixteen in number.

The following is mostly extracted from Mr. Wilson's Ornithology of the United States, and is very full on the subject.

THIS is the *Field Martin* of Maryland and some of the southern states, and the *King-bird* of Pennsylvania and several of the northern districts. The epithet *Tyrant*, which is generally applied to him by naturalists, I am not altogether so well satisfied with ; some, however, may think the two terms pretty nearly synonymous.

The trivial name King as well as Tyrant has been bestowed on this bird for its extraordinary behavior, and the authority it assumes over all others, during the time of breeding. At that season his extreme affection for his mate, and for his nest and young, makes him suspicious of every bird that happens to pass near his residence, so that he attacks without discrimination, every intruder. In the months of May, June, and part of July, his life is one continued scene of broils and battles, in which, however, he generally comes off conqueror. Hawks and crows, the bald eagle, and the great black eagle, all equally dread a rencontre with this dauntless little champion, who, as soon as he perceives one of these last approaching, lanches into the air to meet him, mounts to a considerable height above him, and darts down on his back, sometimes fixing there to the great annoyance of his sovereign, who, if no convenient retreat or resting place be near, endeavors by various evolutions to rid himself of his merciless adversary. But the King-bird is not so easily dismounted. He teazes the eagle incessantly, sweeps upon him from right and left,

1. Turret T. or King Bird.

J. P. Butcher.

2. Small Green crested F.



2509

remounts, that he may descend on his back with the greater violence ; all the while keeping up a shrill and rapid twittering ; and continuing the attack sometimes for more than a mile, till he is relieved by some other of his tribe equally eager for the contest.

There is one bird, however, which by its superior rapidity of flight, is sometimes more than a match for him ; and I have several times witnessed his precipitate retreat before this active antagonist. This is the *Purple Martin*, one whose food and disposition is pretty similar to his own ; but who has greatly the advantage of him on wing, in eluding all his attacks, and teasing him as he pleases. I have also seen the red-headed woodpecker, while clinging on a rail of the fence, amuse himself with the violence of the King-bird, and play *bo-peep* with him round the rail, while the latter, highly irritated, made every attempt as he swept from side to side to strike him, but in vain. All this turbulence, however, vanishes as soon as his young are able to shift for themselves and he is then as mild and peaceable as any other bird.

But he has a worse habit than all these ; one much more obnoxious to the husbandman, and often fatal to himself.—He loves, not the honey, but the *bees* ; and, it must be confessed, is frequently on the look-out for these little industrious insects. He plants himself on a post of the fence, or on a small tree in the garden, not far from the hives, and thence sallies on them as they pass and repass, making great havoc among their numbers. His shrill twitter, so near to the house, gives intimation to the farmer of what is going on, and the gun soon closes his career forever. Man arrogates to himself, in this case, the exclusive privilege of murder ; and after putting thousands of these same little insects to death, seizes on the fruits of their labor.

The King-birds arrive in Pennsylvania about the twentieth of April, sometimes in small bodies of five and six together, and are at first very silent, until they begin to pair, and build their nest. This generally takes place about the first week in May. The nest is very often built in the orchard, on the

horizontal branch of an apple tree ; frequently also, as Catesby observes, on a sassafras tree, at no great height from the ground. The outside consists of small slender twigs, tops of withered flowers of the plant yarrow, and others, well wove together with tow and wool ; and is made large, and remarkably firm and compact. It is usually lined with fine dry fibrous grass, and horse hair. The eggs are five, of a very pale cream color, or dull white, marked with a few large spots of deep purple, and other smaller ones of light brown, chiefly, though not altogether, towards the great end. They generally build twice in the season.

The King-bird is altogether destitute of song, having only the shrill twitter above mentioned. His usual mode of flight is singular. The vibrations of his broad wings, as he moves slowly over the fields, resemble those of a hawk hovering and settling in the air to reconnoitre the ground below ; and the object of the King-bird is no doubt something similar, viz. : to look out for passing insects, either in the air, or among the flowers and blossoms below him. In fields of pasture he often takes his stand, on the tops of the mullein, and other rank weeds, near the cattle, and makes occasional sweeps after passing insects, particularly the large black gad-fly, so terrifying to horses and cattle. His eye moves restlessly around him, traces the flight of an insect for a moment or two, then that of a second, and even a third, until he perceives one to his liking, when with a shrill sweep he pursues, seizes it, and returns to the same spot again, to look out for more. This habit is so conspicuous when he is watching the bee-hive, that several intelligent farmers of my acquaintance are of opinion that he picks out only the *drones*, and never injures the working bees. Be this as it may, he certainly gives a preference to one bee, and one species of insect, over another. He hovers over the river, sometimes for a considerable time, darting after insects that frequent such places, snatching them from the surface of the water, and diving about in the air like a swallow ; for he possesses at will great powers of wing. Numbers of them are frequently seen thus engaged, for hours

together, over the rivers Delaware and Schuylkill, in a calm day, particularly towards evening. He bathes himself by diving repeatedly into the water from the overhanging branches of some tree ; where he sits to dry and dress his plumage.

Whatever antipathy may prevail against him for depredations on the drones, or if you will, on the bees, I can assure the cultivator, that this bird is greatly his friend, in destroying multitudes of insects whose larvæ prey on the harvests of his fields, particularly his corn, fruit trees, cucumbers, and pumpkins. These noxious insects are the daily food of this bird ; and he destroys, upon a very moderate average, some hundreds of them daily. The death of every King-bird is therefore an actual loss to the farmer, by multiplying the numbers of destructive insects ; and encouraging the depredations of crows, hawks, and eagles, who avoid as much as possible his immediate vicinity.

As a friend to this persecuted bird, and an enemy to prejudices of every description, will the reader allow me to set this matter in a somewhat clearer and stronger light, by presenting him with a short poetical epitome of the King-bird's history ?

Far in the south, where vast Meragnon flows,
And boundless forests unknown wilds enclose ;
Vine-tangled shores, and suffocating woods,
Parch'd up with heat, or drown'd with pouring floods ;
Where each extreme alternately prevails,
And Nature sad their ravages bewails :
Lo ! high in air, above those trackless wastes,
With Spring's return the King-bird hither hastes ;
Coasts the fam'd Gulf,* and from his height explores,
Its thousand streams, its long indented shores,
Its plains immense, wide op'ning on the day,
Its lakes and isles where feather'd millions play ;
All tempt not him ; till, gazing from on high,
COLUMBIA'S regions wide below him lie ;
There end his wanderings and his wish to roam,
There lie his native woods, his fields, his *home* ;
Down, circling, he descends, from azure heights,
And on a full-blown sassafras alights.

* Of Mexico.

Fatigued and silent, for a while he views
 His old frequented haunts, and shades recluse,
 Sees brothers, comrades, every hour arrive—
 Hears, humming round, the tenants of the hive;
 Love fires his breast, he woos, and soon is blest;
 And in the blooming orchard builds his nest.

Come now, ye cowards! ye whom heav'n disdains,
 Who boast the happiest home—the richest plains;
 On whom, perchance, a wife, an infant's eye
 Hang as their hope, and on your arm rely;
 Yet, when the hour of danger and dismay
 Comes on that country, sneak in holes away,
 Shrink from the perils ye were bound to face,
 And leave those babes and country to disgrace;
 Come here (if such we have), ye dastard herd!
 And kneel in dust before this noble bird.

When the speck'd eggs within his nest appear,
 Then glows affection, ardent and sincere;
 No discord sours him when his mate he meets,
 But each warm heart with mutual kindness beats.
 For her repast he bears along the lea
 The bloated gad-fly and the balmy bee;
 For her repose scours o'er the adjacent farm,
 Whence Hawks might dart, or lurking foes alarm;
 For now abroad a band of ruffians prey,
 The Crow, the Cuckoo, and th' insidious Jay;
 These, in the owner's absence, all destroy,
 And murder every hope and every joy.

Soft sits his brooding mate; her guardian he,
 Perch'd on the top of some tall neighb'ring tree;
 Thence, from the thicket to the concave skies,
 His watchful eye around unceasing flies.
 Wrens, Thrushes, Warblers, startled at his note,
 Fly in affright the consecrated spot.
 He drives the plund'ring *Jay*, with honest scorn,
 Back to his woods; the *Mocker* to his thorn;
 Sweeps round the *Cuckoo*, as the thief retreats;
 Attacks the *Crow*; the diving *Hawk* defeats;
 Darts on the *Eagle* downwards from afar,
 And midst the clouds prolongs the whirling war.
 All danger o'er, he hastens back elate,
 To guard his post and feed his faithful mate.

Behold him now, his little family flown,
 Meek, unassuming, silent, and alone;
 Lur'd by the well-known hum of fav'rite bees,
 As slow he hovers o'er the garden trees,

(For all have failings, passions, whims that lead ;
 Some fav'rite wish, some appetite to feed ;)
 Strait he alights, and from the pear-tree spies
 The circling stream of humming insects rise ;
 Selects his prey ; darts on the busy brood,
 And shrilly twitters o'er his sav'ry food.

Ah ! ill-timed triumph ! direful note to thee,
 That guides thy murderer to the fatal tree ;
 See where he skulks ! and takes his gloomy stand ;
 The deep-charg'd musket hanging in his hand ;
 And gaunt for blood, he leans it on a rest,
 Prepar'd, and pointed at thy snow-white breast.
 Ah friend ! good friend ! forbear that barb'rous deed,
 Against it valor, goodness, pity plead ;
 If e'er a family's griefs, a widow's wo,
 Have reach'd thy soul, in mercy let me go !
 Yet, should the tear of pity nought avail,
 Let *interest* speak, let *gratitude* prevail ;
 Kill not thy friend, who thy whole harvest shields,
 And sweeps ten thousand vermin from thy fields ;
 Think how this dauntless bird, thy poultry's guard,
 Drove ev'ry Hawk and Eagle from thy yard ;
 Watched round thy cattle as they fed, and slew
 The hungry black'ning swarms that round them flew ;
 Some small return, some little right resign,
 And spare *his* life whose services are thine !
 ——— I plead in vain ! Amid the bursting roar
 The poor, lost KING-BIRD, welters in his gore.

This species is eight inches long, and fourteen in extent ; the general color above is a dark slaty ash ; the head and tail are nearly black ; the latter *even* at the end, tipped with white ; the wings are more of a brownish cast ; the quills and wing-coverts are also edged with dull white ; the upper part of the breast is tinged with ash ; the throat, and all the rest of the lower parts are pure white ; the plumage on the crown, though not forming a crest, is frequently erected, as represented in the plate, and discovers a rich bed of brilliant orange, or flame color, called by the country people his crown ; when the feathers lie close this is altogether concealed. The bill is very broad at the base, overhanging at the point, and notched, of a glossy black color, and furnished with bristles at the base ; the legs and feet are black, seamed with gray ;

the eye hazel. The female differs in being more brownish on the upper parts, has a smaller streak of paler orange on the crown, and a narrower border of duller white on the tail. The young birds do not receive the orange on the head during their residence here the first season.

This bird is very generally known, from the lakes to Florida. Besides insects, they feed, like every other species of their tribe with which I am acquainted, on various sorts of berries, particularly blackberries, of which they are extremely fond. Early in September they leave Pennsylvania on their way to the south.

The Great Crested flycatcher is less generally known than the preceding, being chiefly confined to the woods. There his harsh *squeak*, for he has no song, is occasionally heard above most others. He also visits the orchard; is equally fond of bees; but wants the courage and magnanimity of the King-bird. He arrives in Pennsylvania early in May, and builds his nest in a hollow tree deserted by the blue-bird or woodpecker. The materials of which this is formed are scanty, and rather novel. One of these nests, now before me, is formed of a little loose hay, feathers of the Guinea fowl, hogs' bristles, pieces of cast snake skins, and dogs' hair.—Snake skins with this bird appear to be an indispensable article, for I have never yet found one of his nests without this material forming a part of it. Whether he surrounds his nest with this by way of *terrorem*, to prevent other birds or animals from entering; or whether it be that he finds its silky softness suitable for his young, is uncertain; the fact, however, is notorious. The female lays four eggs of a dull cream color, thickly scratched with purple lines of various tints, as if done with a pen.

The Pewit flycatcher is one of our earliest spring visitants, arriving about the first week in March, and continuing with us until October. The favorite resort of this bird is by streams of water, under, or near bridges, in caves, &c. Near such places he sits on a projecting twig, calling out *pe-wee, pe-wit-titee pe-wee*, for a whole morning; darting after insects, and

returning to the same twig ; frequently flirting his tail, like the wagtail, though not so rapidly. He begins to build about the twentieth or twenty-fifth of March, on some projecting part under a bridge—in a cave—in an open well five or six feet down among the interstices of the side walls—often under a shed—in the low eaves of a cottage, and such like places. The outside is composed of mud mixed with moss ; is generally large and solid ; and lined with flax and horse hair.—The eggs are five, pure white, with two or three dots of red near the great end. I have known them rear three broods in one season.

The notes of the Pewee, like those of the blue-bird, are pleasing, not for any melody they contain, but from the ideas of spring and returning verdure, with all the sweets of this lovely season, which are associated with his simple but lively ditty. Towards the middle of June he becomes nearly silent, and late in the fall gives us a few farewell and melancholy repetitions, that recall past imagery, and make the decayed and withered face of nature appear still more melancholy.

The Pewit is six inches and a half in length, and nine and a half broad ; the upper parts are of a dark dusky olive ; the plumage of the head, like those of the two preceding, is loose, subcrested, and of a deep brownish black ; wings and tail deep dusky, the former edged on every feather with yellowish white, the latter forked, and widening remarkably towards the end ; bill formed exactly like that of the King-bird ; whole lower parts a pale delicate yellow ; legs and bill wholly black ; iris hazel. The female is almost exactly like the male, except in having the crest somewhat more brown.

The species called the Wood Pewee flycatcher, is an exceedingly expert bird. It loves to sit on the high dead branches, amid the gloom of the woods, calling out in a feeble plaintive tone, *peto way ; peto way ; pee way* ; occasionally darting after insects ; sometimes making a circular sweep of thirty or forty yards, snapping up numbers in its way with great adroitness ; and returning to its position and chant as before. In the latter part of August its notes are almost the only ones

to be heard in the woods ; about which time also, it even approaches the city, where I have frequently observed it busily engaged under trees, in solitary courts, gardens, &c., feeding and training its young to their profession. About the middle of September it retires to the south a full month before the other.

Length six inches, breadth ten ; back dusky olive, inclining to greenish ; head subcrested and brownish black ; tail forked and widening towards the tips, lower parts pale yellowish white ; the only discriminating marks between this and the preceding are the size, and the color of the lower mandible, which in this is yellow—in the Pewee black. The female is difficult to be distinguished from the male.

The small Green-crested Flycatcher is a species which is but little known. It inhabits the deepest, thick shaded, solitary parts of the woods, sits generally on the lower branches, utters every half minute or so a sudden sharp squeak, which is heard a considerable way through the woods ; and as it flies from one tree to another has a low querulous note, something like the twitterings of chickens nestling under the wings of the hen. On alighting this sound ceases ; and it utters its note as before. It arrives from the south about the middle of May ; builds on the upper side of a limb, in a low swampy part of the woods, and lays five white eggs. It leaves us about the beginning of September. It is a rare and very solitary bird, always haunting the most gloomy, moist and unfrequented parts of the forest. It feeds on flying insects ; devours bees ; and in the season of huckle-berries they form the chief part of its food. Its northern migrations extend as far as Newfoundland.

The length of this species is five inches and a half, in breadth nine inches ; the upper parts are of a green olive color ; the lower pale greenish yellow, darkest on the breast ; the wings are deep brown, crossed with two bars of yellowish white, and a ring of the same surrounds the eye, which is hazel. The tail is *rounded* at the end ; the bill is remarkably flat and broad, dark brown above, and flesh color below ;

legs and feet pale ash. The female differs little from the male in color.

The American Redstart is another species of the *Muscicapa* which has been classed by several of our most respectable ornithologists among the warblers, yet in no species are the characteristics of the genus *Muscicapa* more decisively marked ; and in fact it is one of the most expert flycatchers of its tribe. It is almost perpetually in motion ; and will pursue a retreating party of flies from the tops of the tallest trees, in an almost perpendicular, but zig-zag direction, to the ground, while the clicking of its bill is distinctly heard, and I doubt not but it often secures ten or twelve of these in a descent of three or four seconds. It then alights on an adjoining branch, traverses it lengthwise for a few moments, flirting its expanded tail from side to side, and suddenly shoots off, in a direction quite unexpected, after fresh game, which it can discover at a great distance. Its notes, or twitter, though animated and sprightly, are not deserving the name of song ; sometimes they are *weese, weese, weese*, repeated every quarter of a minute, as it skips among the branches. The interior of the forest, the borders of swamps and meadows, deep glens covered with wood, and wherever flying insects abound, there this little bird is sure to be seen. It is very generally found over the whole United States ; and has been taken at sea, in the fall, on its way to St. Domingo, and other of the West India islands, where it winters, along with many more of our summer visitants.

The American Redstart build frequently in low bushes, in the fork of a small sapling, or on the drooping branches of the elm, within a few feet of the ground ; outwardly it is formed of flax well wound together, and moistened with its saliva, interspersed here and there with pieces of lichen, and lined with a very soft downy substance. The female lays five white eggs, sprinkled with gray, and specks of blackish. The male is extremely anxious for its preservation ; and on a person's approaching the place, will flirt about within a few feet, seeming greatly distressed.

The length of this species is five inches, extent six and a quarter; the general color above is black, which covers the whole head and neck, and spreads on the upper part of the breast in a rounding form; where, as well as on the head and neck, it is glossed with steel blue; sides of the breast, below this black, the inside of the wings, and upper half of the wing-quills, are of a fine aurora color; but the greater and lesser coverts of the wings being black conceal this; and the orange, or aurora color, appears only as a broad transverse band across the wings; from thence to the tip they are brownish; the four middle feathers of the tail are black, the other eight of the same aurora color, and black towards the tips; belly and vent white, slightly streaked with pale orange; legs black; bill of the true *Muscicapa* form, triangular at the base, beset with long bristles, and notched near the point; the female has not the rich aurora band across the wing; her back and crown is cinerous, inclining to olive; the white below is not so pure; lateral feathers of the tail and sides of the breast greenish yellow; middle tail feathers dusky brown. The young males of a year old are almost exactly like the female, differing in these particulars, that they have a yellow band across the wings which the female has not, and the back is more tinged with brown; the lateral tail feathers are also yellow; middle ones brownish black; inside of the wings yellow. On the third season they receive their complete colors; and as males of the second year, in nearly the dress of the female, are often seen in the woods, having the same notes as the full plumaged male, it has given occasion to some people to assert, that the females sing as well as the males; and others have taken them for another species. The fact, however, is as I have stated it. This bird is too little known by people in general to have any provincial name.

The Blue-gray Flycatcher is a diminutive species, which but for the length of the tail, would rank next to our humming bird in magnitude. It is a very dexterous flycatcher, and has also something of the manners of the titmouse, with whom, in early spring and fall, it frequently associates. It

arrives from the south about the middle of April ; and about the beginning of May builds its nest, which it generally fixes among the twigs of a tree, sometimes at the height of ten feet from the ground, sometimes fifty feet high, on the extremities of the tops of a high tree in the woods. This nest is formed of very slight and perishable materials, the husks of buds, stems of old leaves, withered blossoms of weeds, down from the stalks of fern, coated on the outside with gray lichen, and lined with a few horse hairs. Yet in this frail receptacle, which one would think scarcely sufficient to admit the body of the owner, and sustain even its weight, does the female cowbird venture to deposit her egg ; and to the management of these pigmy nurses leaves the fate of her helpless young. The motions of this little bird are quick ; he seems always on the look out for insects ; darts about from one part of the tree to another with hanging wings and erected tail, making a feeble chirping, *tsee, tsee*, no louder than a mouse. Though so small in itself, it is ambitious of hunting on the highest branches, and is seldom seen among the humbler thickets.

The length of this species is four inches and a half, extent six and a half ; front and line over the eye black ; bill black, very slender, overhanging at the tip, notched, broad, and furnished with bristles at the base ; the color of the plumage above is a light bluish gray, bluest on the head, below bluish white ; tail longer than the body, a little rounded and black, except the exterior feathers, which are almost all white, and the next two also tipped with white ; tail coverts black ; wings brownish black, some of the secondaries next the body edged with white ; legs extremely slender, about three-fourths of an inch long, and of a bluish black color. The female is distinguished by wanting the black line round the front.

The food of this bird is small winged insects and their larvæ, but particularly the former, which it seems almost always in pursuit of.

The Red-eyed Flycatcher is a numerous species, though confined chiefly to the woods and forests, and is a bird of passage. It arrives here late in April ; has a loud, lively,

and energetic song, which it continues, as it hunts among the thick foliage, sometimes for an hour with little intermission. In the months of May, June, and to the middle of July, it is the most distinguishable of all the other warblers of the forest ; and even in August, long after the rest have almost all become mute, the notes of the Red-eyed Flycatcher are frequently heard with unabated spirit. These notes are in short, emphatical bars, of two, three, or four syllables. In Jamaica, where this bird winters, and is probably also resident, it is called, as Sloan informs us, " Whip-Tom Kelly," from an imagined resemblance of its notes to these words.— And indeed, on attentively listening for sometime to this bird in his full ardor of song, it requires but little of imagination to fancy that you hear it pronounce these words, " Tom Kelly ! Whip-Tom Kelly !" very distinctly. It inhabits from Georgia to the river St. Lawrence.

This bird builds in the month of May a small neat pensile nest, generally suspended between two twigs of a young dogwood or other small sapling. It is hung by the two upper edges, seldom at a greater height than four or five feet from the ground. It is formed of pieces of hornets' nests, some flax, fragments of withered leaves, slips of vine bark, bits of paper, all glued together with the saliva of the bird, and the silk of caterpillars, so as to be very compact ; the inside is lined with fine slips of grape vine bark, fibrous grass, and sometimes hair. These nests are so durable that I have often known them to resist the action of the weather for a year ; and in one instance I found the nest of the yellow-bird built in the cavity of one of these of the preceding year. The mice very often take possession of them after they are abandoned by the owners. The eggs are four, sometimes five, pure white, except near the great end, where they are marked with a few small dots of dark brown or reddish. They generally raise two broods in a season.

The White-eyed Flycatcher is a lively, active, and sociable little bird, possessing a strong voice for its size, and a great variety of notes ; and singing with little intermission, from

its first arrival to a little before its departure in September. On the 27th of February I heard this bird in the southern parts of the state of Georgia, in considerable numbers, singing with great vivacity. They had only arrived a few days before. Its arrival at the north, after an interval of seven weeks, is a proof that our birds of passage, particularly the smaller species, do not migrate at once from south to north; but progress daily, keeping company, as it were, with the advances of spring. It has been observed in the neighborhood of Savannah, so late as the middle of November; and probably winters in Mexico, and the West Indies.

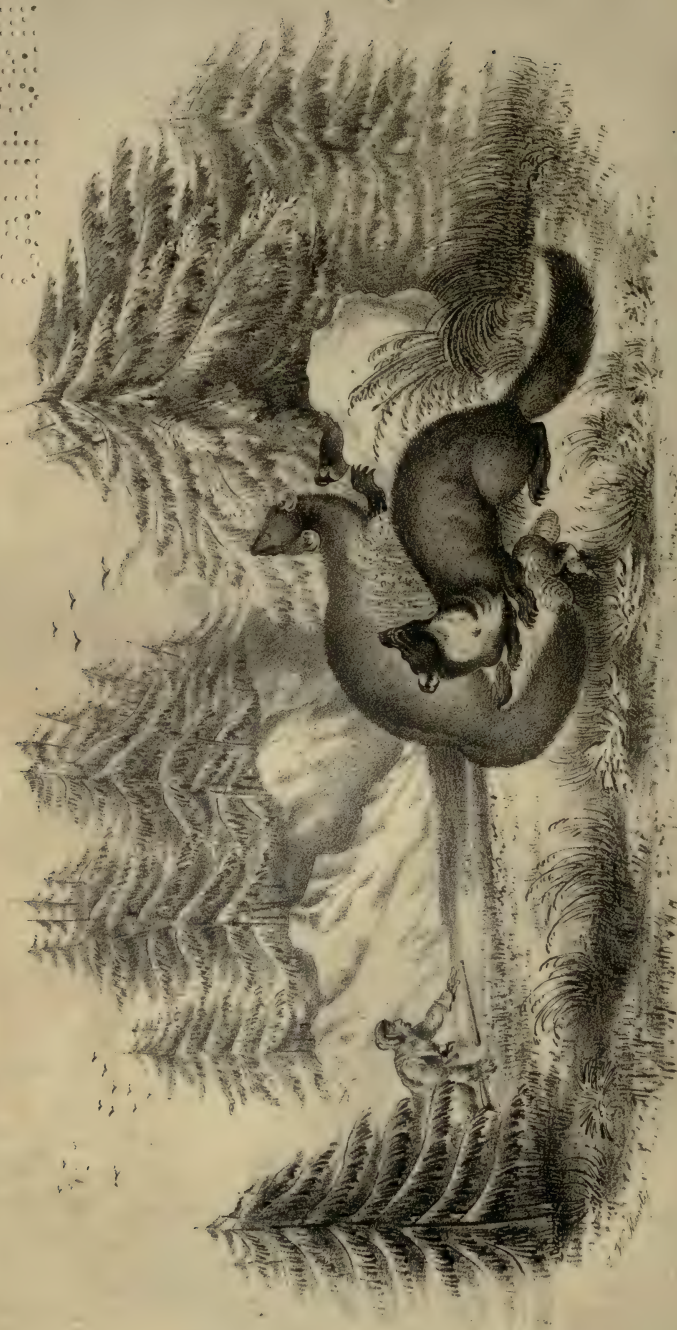
This bird builds a very neat little nest, often in the figure of an inverted cone; it is suspended by the upper edge of the two sides, on the circular bend of a prickly vine, a species of *Smilax* that generally grows in low thickets. Outwardly it is constructed of various light materials, bits of rotten wood, fibres of dry stalks, of weeds, pieces of paper, commonly newspapers, an article almost always found about its nest, so that some of my friends have given it the name of the *Politician*; all these substances are interwoven with the silk of caterpillars, and the inside is lined with fine dry grass and hair.—The female lays five eggs, pure white, marked near the great end with a very few small dots of deep black or purple. They generally raise two brood in a season. They seem particularly attached to thickets of this species of *Smilax*, and make a great ado when any one comes near their nest; approaching within a few feet, looking down, and scolding with great vehemence. In Pennsylvania they are a numerous species.

The White-eyed Flycatcher is five inches and a quarter long, and seven in extent; the upper parts are a fine yellow olive, those below white, except the sides of the breast, and under the wings, which are yellow; line round the eye, and spot near the nostril also rich yellow; wings deep dusky black, edged with olive green, and crossed with two bars of pale yellow; tail forked, brownish black, edged with green olive; bill, legs and feet light blue; the sides of the neck incline to a grayish ash. The female, and young of the first

season, are scarcely distinguishable in plumage from the male.

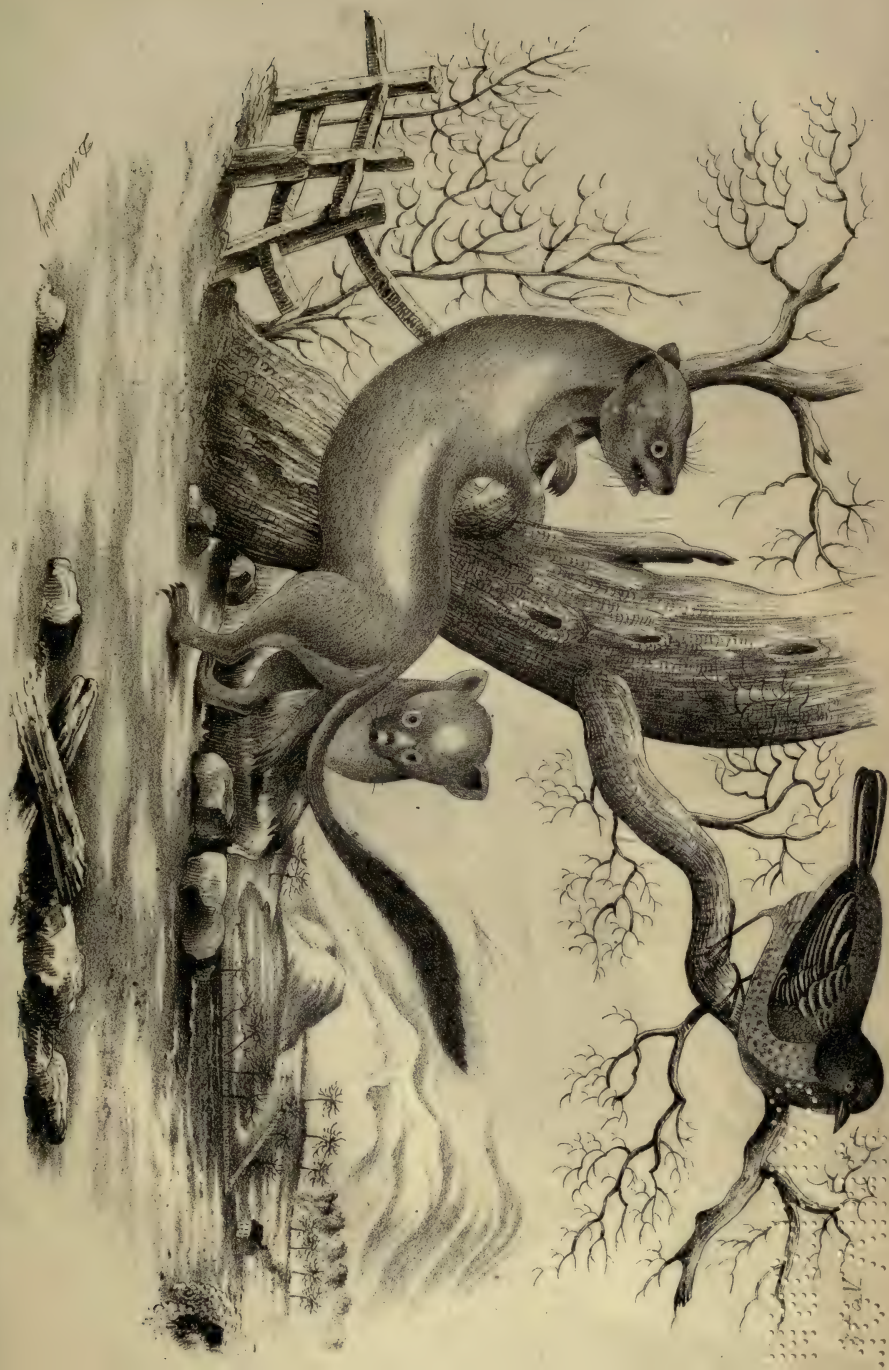
The Warbling Flycatcher is a sweet little warbler. In its general appearance it resembles the Red-eyed Flycatcher; but on a close comparison differs from that bird in many particulars. It arrives about the middle of April, and inhabits the thick foliage of orchards and high trees; its voice is soft, tender and soothing, and its notes flow in an easy continued strain that is extremely pleasing. It is often heard among the weeping willows and Lombardy poplars; is rarely observed in the woods; but seems particularly attached to the society of man. It gleams among the leaves, occasionally darting after winged insects, and searching for caterpillars; and seems by its manners to partake considerably of the nature of the genus *Sylvia*. It is late in departing, and I have frequently heard its notes among the fading leaves of the poplar in October.

This little bird may be distinguished from all the rest of our songsters by the soft tender easy flow of its notes, while hid among the foliage. In these there is nothing harsh, sudden or emphatical; they glide along in a kind of meandering strain that is peculiarly its own. In May and June it may be generally heard in the orchards, the borders of the city, and around the farm house.



Handling the Martin.

Oemine watching its prey!



2000

THE MARTIN.

PLATES XLI. AND XLII.

Class—Mammalia. *Order*—Carnivora: flesh eaters. *Family*—Digitigrada. *Genus*—Mustela. The species are numerous, including the Martin, Weasel, Ermine, Ferret, Polecat, Sable, Ichneumon, Genet, Civet, and Glutton.

HAVING described the bolder ranks of carnivorous animals, the lion, tiger, &c., we now come to a minuter and more feeble class, less formidable indeed than any of the former, but far more numerous, and in proportion to their size, more active and enterprising. The Weasel kind may be particularly distinguished from other carnivorous animals, by the length and slenderness of their bodies, which are so fitted as to wind, like worms, into very small openings, after their prey; and hence also they have received the name of vermin, from their similitude to the worm in this particular. These animals differ from all the cat kind, in the formation and disposition of their claws, which, as in the dog kinds, they can neither draw nor extend at pleasure, as cats are known to do. They differ from the dog kind, in being clothed rather with fur than hair; and although some varieties of the fox may resemble them in this particular, yet the coat of the latter is longer, stronger, and always more resembling hair. Beside these distinctions, all animals of the Weasel kind have glands placed near the anus, that either open into or beneath it, furnishing a substance that, in some, has the most offensive smell in nature; in others, the most pleasant perfume. All of this kind are still more marked by their habitudes and dispositions, than their external form; cruel, voracious, and cowardly, they subsist only by theft, and find their chief protection in their minuteness. They are all, from the shortness of their legs, slow in pursuit; and, therefore, owe their support to their patience, assiduity and cunning. As their prey

is precarious, they live a long time without food ; and if they happen to fall in where it is in plenty, they instantly destroy all about them before they begin to satisfy their appetite, and suck the blood of every animal before they begin to touch its flesh.

These are the marks common to this kind, all the species of which have a most striking resemblance to each other ; and he that has seen one, in some measure, may be said to have seen all. The chief distinction in this numerous class of animals, is to be taken from the size ; for no words can give the minute irregularities of that outline by which one species is to be distinguished from that which is next it. We will begin, therefore, with the least and the best known of this kind, and still marking the size, will proceed gradually to larger and larger, until we come from the Weasel to the glutton, which we take to be the largest of all. The Weasel will serve as a model for all the rest ; and, indeed, the points in which they differ from this little animal, are but very inconsiderable.

The Weasel, as was said, is the smallest of this numerous tribe ; its length not exceeding seven inches, from the tip of the nose to the insertion of the tail. This length, however, seems to be very great, if we compare it with the height of the animal, which is not above an inch and a half. In measuring the wolf, we find him to be not above once and a half as long as he is high ; in observing the Weasel, we find it near five times as long as it is high, which shows an amazing disproportion. The tail also, which is bushy, is two inches and a half long, and adds to the apparent length of this little animal's body. The color of the Weasel is of a bright red on the back and sides, but white under the throat and the belly. It has whiskers like a cat ; and thirty-two teeth, which is two more than any of the cat kind ; and these also seem better adapted for tearing and chewing, than those of the cat kind are. The eyes are little and black ; the ears short, broad, and roundish ; and have a fold at the lower part, which makes them look as if they were double. Beneath the corners of the mouth, on each jaw, is a spot of brown.

This animal, though very diminutive to appearance, is, nevertheless, a very formidable enemy to quadrupeds an hundred times its own size. It is very common and well known in most parts of this country ; but seems held in very different estimation in different parts of it. In those places where sheep or lambs are bred, the Weasel is a most noxious inmate, and every art is used to destroy it ; on the contrary, in places where agriculture is chiefly followed, the Weasel is considered as a friend that thins the number of such vermin as chiefly live upon corn : however, in all places, it is one of the most untameable and untractable animals in the world. When kept in a cage, either for the purposes of amusement or inspection, it will not touch any part of its victuals while any body looks on. It keeps in a continual agitation, and seems frightened so much at the sight of mankind, that it will die, if not permitted to hide itself from their presence. For this purpose, it must be provided, in its cage, with a sufficient quantity of wool or hay, in which it may conceal itself, and where it may carry whatever it has got to eat ; which, however, it will not touch until it begins to putrify. In this state it is seen to pass three parts of the day in sleeping ; and reserves the night for exercise and eating.

In its wild state, the night is likewise the time during which it may be properly said to live. At the approach of evening it is seen stealing from its hole, and creeping about the farmer's yard for its prey. If it enters the place where poultry are kept, it never attacks the cocks or the old hens, but immediately aims at the young ones. It does not eat its prey on the place, but, after killing it by a single bite near the head, and with a wound so small that the place can scarcely be perceived, it carries it off to its young, or its retreat. It also breaks and sucks the eggs, and sometimes kills the hen, that attempts to defend them. It is remarkably active, and, in a confined place, scarce any animal can escape it. It will run up the side of walls with such facility, that no place is secure from it ; and its body is so small, that there is scarce any hole but what it can wind through. During the summer, its excursions are more extensive ; but in winter, it chiefly confines itself in barns and farm-yards, where

it remains till spring, and where it brings forth its young. All this season it makes war upon the rats and mice, with still greater success than the cat; for being more active and slender, it pursues them into their holes, and, after a short resistance, destroys them. It creeps also into pigeon-holes, destroys the young, catches sparrows, and all kinds of small birds; and, if it has brought forth its young, hunts with still greater boldness and avidity. In summer, it ventures farther from the house; and particularly goes into those places where the rat, its chiefest prey, goes before it. Accordingly, it is found in the lower grounds, by the side of waters, near mills, and often is seen to hide its young in the hollow of a tree.

The female takes every precaution to make an easy bed for her little ones: she lines the bottom of her hole with grass, hay, leaves, and moss, and generally brings forth from three to five at a time. All animals of this, as well as those of the dog kind, bring forth their young with closed eyes: but they very soon acquire strength sufficient to follow the dam in her excursions, and assist in her projects of petty rapine. The Weasel, like all others of its kind, does not run on equably, but moves by bounding; and when it climbs a tree by a single spring it gets a good way from the ground. It jumps in the same manner upon its prey; and, having an extremely limber body, evades the attempts of much stronger animals to seize it.

This animal, like all of its kind, has a very strong smell; and that of the Weasel is peculiarly fœtid. This scent is very distinguishable in those creatures, when they void their excrement; for the glands which furnished this fœtid substance, which is of the consistence of suet, open directly into the orifice of the anus, and taint the excrement with the strong effluvia. The Weasel smells more strongly in summer than in winter; and more abominably when irritated or pursued, than when at ease. It always preys in silence, and never has a cry except when struck, and then it has a rough kind of squeaking, which at once expresses resentment and pain. Its appetite for animal food never forsakes it; and it seems even to take a pleasure in the vicinity of putrefaction. Mr. Buffon tells us of one of

them being found, with three young ones, in the carcass of a wolf that was grown putrid, and that had been hung up, by the hind legs as a terror to others. Into this horrid retreat the Weasel thought proper to retire to bring forth her young ; she had furnished the cavity with hay, grass, and leaves ; and the young were just brought forth when they were discovered by a peasant passing that way.

THE ERMINE, OR STOAT.

Next to the Weasel in size, and perfectly alike in figure, is the Ermine. The difference between this and the former animal is so very small, that many, and among the rest, Linnæus, who gives but one description of both, have confounded the two kinds together. However, their differences are sufficient to induce later naturalists to suppose the two kinds distinct ; and as their lights seem preferable, we choose to follow their descriptions.

The Stoat, or Ermine, differs from the Weasel in size, being usually nine inches long ; whereas the former is not much above six. The tail of the Ermine is always tipped with black, and is longer in proportion to the body, and furnished with hair. The edges of the ears and the ends of the toes in this animal are of a yellowish white ; and although it is of the same color with the weasel, being of a lightish brown, and though both this animal, as well as the weasel, in the most northern parts of Europe, changes its color in winter, and becomes white, yet even then the Weasel may be easily distinguished from the Ermine by the tip of the tail, which in the latter is always black.

It is well known that the fur of the Ermine is the most valuable of any hitherto known ; and it is in winter only that this little animal has it of the proper color and consistence. In summer, the Ermine, as was said before, is brown, and it may at that time more properly be called the *Stoat*. There are few so unacquainted with quadrupeds as not to perceive this change of color in the hair, which in some degree obtains in them all. The horse, the cow, and the goat, all mani-

festly change color in the beginning of summer, the old long hair falling off, and a shorter coat of hair appearing in its room, generally of a darker color, and yet more glossy.—What obtains in our temperate climate, is seen to prevail still more strongly in those regions where the winters are long and severe, and the summers short and yet generally hot in an extreme degree. The animal has strength enough during that season to throw off a warm coat of fur, which would but incommode it, and continues for two or three months in a state somewhat resembling the ordinary quadrupeds of the milder climates. At the approach of winter, however, the cold increasing, the coat of hair seems to thicken in proportion; from being coarse and short, it lengthens and grows finer, while multitudes of smaller hairs grow up between the longer, thicken the coat, and give it all that warmth and softness which are so much valued in the furs of the northern animals.

It is no easy matter to account for this remarkable warmth of the furs of northern quadrupeds, or how they come to be furnished with such an abundant covering. It is easy enough, indeed, to say that nature fits them thus for the climate; and like an indulgent mother, when she exposes them to the rigor of an intemperate winter, supplies them with a covering against its inclemency. But this is only flourishing: it is not easy to tell how nature comes to furnish them in this manner. A few particulars on this subject are all that we yet know. It is observable among quadrupeds, as well as even among the human species itself, that a thin sparing diet is apt to produce hair; children that have been ill fed, famished dogs and horses, are more hairy than others whose food has been more plentiful. This may, therefore, be one cause that the animals of the north, in winter, are more hairy than those of the milder climates. At that season, the whole country is covered with deep snow, and the provisions which these creatures are able to procure can be but precarious and scanty. Its becoming finer may also proceed from the severity of the cold, that contracts the pores of the skin,

and the hair consequently takes the shape of the aperture through which it grows, as wires are made smaller by being drawn through a smaller orifice. However this may be, all the animals of the arctic climates may be said to have their winter and summer garments, except very far to the north, as in Greenland, where the cold is so continually intense and the food so scarce, that neither the bears nor foxes change color.

The Ermine, as was said, is remarkable among these for the softness, the closeness, and the warmth of its fur. It is brown in summer, like the Weasel, and changes color before the winter is begun, becoming a beautiful cream color, all except the tip of the tail, as was said before, which still continues black. Mr. Daubenton had one of these brought with him its white winter fur, which he put into a cage and kept, in order to observe the manner of moulting its hair. He received it in the beginning of March ; in a very short time it began to shed its coat, and a mixture of brown was seen to prevail among the white, so that at the ninth of the same month its head was nearly become of a reddish brown. Day after day this color appeared to extend, at first along the neck and down the back, in the manner of a stripe of about half an inch broad. The fore-part of the legs then assumed the same color ; a part of the head, the thighs, and the tail, were the last that changed ; but at the end of the month there was no white remaining, except on those parts which are always white in this species, particularly the throat and the belly. However, he had not the pleasure of seeing this animal resume its former whiteness, although he kept it for above two years ; which, without doubt, was owing to its imprisoned state ; this color being partly owing to its stinted food, and partly to the rigor of the season. During its state of confinement, this little animal always continued very wild and untractable ; for ever in a state of violent agitation, except when asleep, which it often continued for three parts of the day. Except for its most disagreeable scent, it was an extremely pretty creature, its eyes sprightly, its physiognomy pleasant, and its motions so swift

that the eye could scarce attend them. It was fed with eggs and flesh, but it always let them putrefy before it touched either. As some of this kind are known to be fond of honey, it was tried to feed this animal with such food for a while; after having for three or four days deprived it of other kind of food, it ate of this, and died shortly after; a strong proof of its being a distinct species from the pole-cat or the martin, who feed upon honey, but otherwise pretty much resemble the Ermine in their figure and dispositions.

In the north of Europe and Siberia their skins make a valuable article of commerce, and they are found there much more frequently than among us. In Siberia they burrow in the fields, and are taken in traps baited with flesh. In Norway they are either shot with blunt arrows, or taken in traps made of two flat stones, one being propped with a stick, to which is fastened a baited string, and when the animals attempt to pull this way, the stone drops and crushes them to death. The fur of the Ermine, in every country, changes by time; for, as much of its beautiful whiteness is given it by certain arts known to the furriers, so its natural color returns, and its former whiteness can never be restored again.

THE FERRET.

The animal next in size to the Ermine, is the Ferret; which is a kind of domestic in Europe, though said to be originally brought from Africa into Spain, which being a country abounding in rabbits, required an animal of this kind more than any other; however this be, it is not to be found at present among us, except in its domestic state; and it is chiefly kept tame, for the purposes of the warren.

The Ferret is about one foot long, being nearly four inches longer than the Weasel. It resembles that animal in the slenderness of its body, and the shortness of its legs; but its nose is sharper, and its body more slender, in proportion to its length. The Ferret is commonly of a cream color; but they are also found of all the colors of the Weasel kind; white, blackish, brown, and party-colored. Those that are

of the whitish kind, have their eyes red, as is almost general with all animals entirely of that color. But its principal distinction from the Weasel, is the length of hair on its tail, which is much longer in the Ferret than in the Weasel. Words will not well express the other distinctions; and what might take up a page in dull discrimination, a single glance of the eye, when the animals themselves are presented, can discover.

As this animal is a native of the torrid zone, so it cannot bear the rigors of our climate without care and shelter; and it generally repays the trouble of its keeping, by its great agility in the warren. It is naturally such an enemy of the rabbit kind, that if a dead rabbit be presented to a young Ferret, although it has never seen one before, it instantly attacks and bites it with an appearance of rapacity. If the rabbit be living, the Ferret is still more eager, seizes it by the neck, winds itself round it, and continues to suck its blood, till it be satiated.

Their chief use in warrens is to enter the holes, and drive the rabbits into the nets that are prepared for them at the mouth. For this purpose, the Ferret is muzzled; otherwise, instead of driving out the rabbit, it would content itself with killing and sucking its blood at the bottom of the hole; but, by this contrivance, being rendered unable to seize its prey, the rabbit escapes from its claws, and instantly makes to the mouth of the hole with such precipitation, that it is inextricably entangled in the net, placed there for its reception. It often happens, however, that the Ferret disengages itself of its muzzle, and then it is most commonly lost, unless it be dug out; for, finding all its wants satisfied in the warren, it never thinks of returning to the owner, but continues to lead a rapacious solitary life while the summer continues, and dies with the cold of the winter. In order to bring the Ferret from his hole, the owners often burn straw and other substances at the mouth; they also beat above to terrify it; but this does not always succeed; for as there are often several issues to each hole, the Ferret is affected neither by the noise nor the smoke, but continues secure at the bottom, sleeping the greatest part of the time, and waking only to satisfy the calls of hunger.

The female of this species, is sensibly less than the male. They are usually kept in boxes, with wool, of which they make themselves a warm bed, that serves to defend them from the rigor of the climate. They sleep almost continually; and the instant they awake, they seem eager for food. They are usually fed with bread and milk. They breed twice a year. Some of them devour their young as soon as brought forth, and then become fit for the male again. Their number is usually from five to six at a litter; and this is said to consist of more females than males. Upon the whole, this is an useful, but a disagreeable and offensive animal; its scent is fœtid, its nature voracious, it is tame without any attachment, and such is its appetite for blood, that it has been known to attack and kill children in the cradle. It is very easy to be irritated; and, although at all times its smell is very offensive, it then is much more so; and its bite is very difficult of cure.

THE MARTIN.

The Martin is a larger animal than any of the former, being generally eighteen inches long, and the tail ten more. It differs from the Polecat, in being about four or five inches longer; its tail also is longer in proportion, and more bushy at the end; its nose is flatter; its cry is sharper and more piercing; its colors are more elegant; and, what still adds to their beauty, its scent is very unlike the former, instead of being offensive, is considered as a most pleasing perfume. The Martin, in short, is the most beautiful of all beasts of prey; its head is small, and elegantly formed; its eyes lively; its ears are broad, rounded, and open; its back, its sides, and tail, are covered with a fine thick downy fur, with longer hair intermixed; the roots are ash color, the middle of a bright chesnut, the points black; the head is brown, with a slight cast of red; the legs, and upper sides of the feet, are of a chocolate color; the palms, or under sides, are covered with a thick down, like that of the body; the feet are broad, the claws white, large, and sharp, well adapted for the purposes of climbing, but, as in others of the Weasel kind, incapable of

being sheathed or unsheathed at pleasure ; the throat and breast are white ; the belly of the same color with the back, but rather paler ; the hair on the tail is very long, especially at the end, where it appears much thicker than near the insertion.

There is also a variety of this animal, called the *yellow-breasted Martin*, which in no respect differs from the former, except that this has a yellow breast, whereas the other has a white one ; the color of the body also is darker ; and, as it lives more among trees than the other Martin, its fur is more valuable, beautiful, and glossy. The former of these Mr. Buffon calls the *fouine* ; the latter simply the *Martin* ; and he supposes them to be a distinct species : but as they differ only in color, it is unnecessary to embarrass history by a new distinction, where there is only so minute a difference.

Of all animals of the Weasel kind, the Martin is the most pleasing ; all its motions show great grace, as well as agility ; and there is scarce an animal in our woods that will venture to oppose it. Quadrupeds five times as big are easily vanquished ; the hare, the sheep, and even the wild cat itself, though much stronger, is not a match for the Martin : and although carnivorous animals are not fond of engaging each other, yet the wild cat and the Martin seldom meet without a combat. Gesner tells us of one of this kind that he kept tame, which was extremely playful and pretty ; it went among the houses of the neighborhood, and always returned home when hungry ; it was extremely fond of a dog that had been bred up with it, and used to play with it as cats are seen to play, lying on its back, and biting without anger or injury. That which was kept tame by Mr. Buffon, was not quite so social ; it was divested of its ferocity, but continued without attachment ; and was still so wild as to be obliged to be held by a chain. Whenever a cat appeared, it prepared for war : and if any of the poultry came within its reach, it flew upon them with avidity. Though it was tied by the middle of the body, it frequently escaped : at first it returned after some hours, but without seeming pleased, as if it only came to be

fed ; the next time it continued abroad longer ; and, at last, went away without ever returning. It ate every thing that was given it, except salad or herbs ; and it was remarkably fond of honey. It was remarked, that it drank often, and often slept for two days together ; and that, in like manner, it was often two or three days without sleeping. Before it went to sleep, it drew itself up into a round, hid its head, and covered it with its tail. When awake it was in continual agitation, and was obliged to be tied up, not less to prevent its attacking the poultry, than to hinder it from breaking whatever it came near, by the capricious wildness of its motions.

The yellow-breasted Martin is much more common in France than in England ; and yet even there this variety is much scarcer than that with the white breast. The latter keeps nearer houses and villages to make its petty ravages among the sheep and the poultry ; the other keeps in the woods, and leads in every respect a savage life, building its nest on the tops of trees, and living upon such animals as are entirely wild like itself. About night-fall it usually quits its solitude to seek its prey, hunts after squirrels, rats and rabbits ; destroys great numbers of birds and their young, takes the eggs from the nest, and often removes them to its own without breaking. The instant the Martin finds itself pursued by dogs, for which purpose there is a peculiar breed, that seem fit for this chase only, it immediately makes to its retreat, which is generally in the hollow of some tree, towards the top, and which it is impossible to come at without cutting it down. Their nest is generally the original tenement of the squirrel, which that little animal bestowed great pains in completing ; but the Martin having killed and dispossessed the little architect, takes possession of it for its own use, enlarges its dimensions, improves the softness of the bed, and in that retreat brings forth its young. Its litter is never above three or four at a time ; they are brought forth with the eyes closed, as in all the rest of this kind, and very soon come to a state of perfection. The dam compensates for her own deficiency of milk, by bringing them eggs and live birds, accustoming them from the beginning to

a life of carnage and rapine. When she leads them from the nest into the woods, the birds at once distinguish their enemies, and attend them, as we before observed of the fox, with all the marks of alarm and animosity. Wherever the Martin conducts her young, a flock of small birds are seen threatening and insulting her, alarming every thicket, and often directing the hunter in his pursuit. These animals are found in all the northern parts of the world, from Siberia to China and Canada. In every country they are hunted for their furs, which are very valuable, and chiefly so when taken in the beginning of winter. The most esteemed parts of the Martin's skin is that part of it which is browner than the rest, and stretches along the back-bone. Thousands of these skins are annually imported into England from Hudson's Bay and Canada.

THE SABLE.

Most of the classes of the Weasel kind would have continued utterly unknown and disregarded, were it not for their furs, which are finer, more glossy, and soft, than those of any other quadruped. Their dispositions are fierce and untameable; their scent generally offensive; and their figure disproportioned and unpleasing. The knowledge of one or two of them would, therefore, have sufficed curiosity; and the rest would probably have been confounded together under one common name, as things useless and uninteresting, had not their skins been coveted by the vain, and considered as capable of adding to human magnificence or beauty.

Of all these, however, the skin of the Sable is the most coveted, and held in the highest esteem. It is of a brownish black; and the darker it is, it becomes the more valuable. A single skin, though not above four inches broad, is often valued at fifty or sixty dollars; the fur differing from others in this, that it has no grain; so that rub it which way you will, it is equally smooth and unresisting. Nevertheless, though this little animal's robe was so much coveted by the great, its history till of late was but very little known; and we are obliged

to Mr. Jonelin for the first accurate description of its form and nature. From him we learn that the Sable resembles the Martin in form and size, and the Weasel in the number of its teeth ; for it is to be observed, that whereas the Martin has thirty-eight teeth, the Weasel has but thirty-four ; in this respect, therefore, the Sable seems to make the shade between these two animals ; being shaped like the one, and furnished with teeth like the other. It is also furnished with very large whiskers about the mouth ; its feet are broad, and, as in the rest of its kind, furnished with five claws on each foot. These are its constant marks ; but its fur, for which it is so much valued, is not always the same. Some of these species are of a dark brown over all the body, except the ears and the throat, where the hair is rather yellow ; others are more of a yellowish tincture, their ears and throat being also much paler. These, in both, are the colors they have in winter, and which they are seen to change in the beginning of the spring ; the former becoming of a yellow brown, and the latter of a pale yellow. In other respects they resemble their kind, in vivacity, agility, and inquietude ; in sleeping by day, and seeking their prey by night ; in living upon smaller animals, and the disagreeable odor that chiefly characterizes their race.

They generally inhabit along the banks of rivers, in shady places, and in the thickest woods. They leap with great ease from tree to tree, and are said to be afraid of the sun, which tarnishes the lustre of their robes. They are chiefly hunted in winter for their skins, during which part of the year they are only in season. They are mostly found in Siberia, and but very few in any other country of the world ; and this scarcity it is which enhances their value. The hunting of the Sable chiefly falls to the lot of the condemned criminals, who are sent from Russia into these wild and extensive forests, that, for the greatest part of the year, are covered with snow ; and, in this instance, as in many others, the luxuries and ornaments of the vain, are wrought out of the dangers and the miseries of the wretched. These are obliged to furnish a certain number of skins every year, and are punished

if the proper quantity be not provided. The Sable is also killed by the Russian soldiers, who are sent into those parts to that end. They are taxed a certain number of skins yearly, like the former, and are obliged to shoot with only a single ball, to avoid spoiling blunt arrows. As an encouragement to hunters, they are allowed to share among themselves the surplus of those skins which they thus procure; and this, in the process of six or seven years, amounts to a very considerable sum. A colonel, during his seven years stay, gains about four thousand dollars for his share, and the common men six or seven hundred each for theirs.

THE ICHNEUMON.

The Ichneumon, which some have injudiciously denominated the *cat of Pharaoh*, is one of the boldest and most useful animals of all the Weasel kind. In the kingdom of Egypt, where it is chiefly bred, it is used for the same purposes that cats are in Europe, and is even more serviceable, as being more expert in catching mice than they. This animal is usually of the size of the Martin, and greatly resembles it in appearance, except that the hair, which is of a grisly black, is much rougher, and less downy. The tail, also, is not so bushy at the end; and each hair in particular has three or four colors, which are seen in different dispositions of its body. Under its rougher hairs, there is a softer fur of a brownish color, the rough hair being about two inches long, but that of the muzzle extremely short, as likewise that on the legs and paws. However, being long since brought into a domestic state, there are many varieties in this animal; some being much larger than the Martin, others much less; some being of a lighter mixture of colors, and some being streaked in the manner of a cat.

The Ichneumon, with all the strength of a cat, has more instinct and agility; a more universal appetite for carnage, and a greater variety of powers to procure it. Rats, mice, birds, serpents, lizards, and insects, are all equally pursued; it attacks every living thing which it is able to overcome, and

indiscriminately preys on flesh of all kinds. Its courage is equal to the vehemence of its appetite. It fears neither the force of the dog, nor the insidious malice of the cat ; neither the claws of the vulture, nor the poison of the viper. It makes war upon all kinds of serpents with great avidity, seizes and kills them, how venomous soever they be ; and, we are told, that when it begins to perceive the effects of their rage, it has recourse to a certain root, which the Indians call after its name, and assert to be an antidote for the bite of the asp or the viper.

But what this animal is particularly serviceable to the Egyptians for, is, that it discovers and destroys the eggs of the crocodile. It also kills the young ones that have not as yet been able to reach the water ; and, as fable usually goes hand in hand with truth, it is said that the Ichneumon sometimes enters the mouth of the crocodile, when it is found sleeping on the shore, boldly attacks the enemy in the inside, and at length, when it has effectually destroyed it, it eats its way out again.

The Ichneumon, when wild, generally resides along the banks of rivers ; and in times of inundation makes to the higher ground, often approaching inhabited places in quest of prey. It goes forward silently and cautiously, changing its manner of moving according to its necessities. Sometimes it carries the head high, shortens its body, and raises itself upon its legs ; sometimes it lengthens itself, and seems to creep along the ground ; it is often observed to sit upon its hind legs, like a dog when taught to beg ; but more commonly it is seen to dart like an arrow upon its prey, and seize it with inevitable certainty. Its eyes are sprightly and full of fire, its physiognomy sensible, its body nimble, its tail long, and its hair rough and various. Like all of its kind, it has glands that open behind and furnish an odorous substance. Its nose is too sharp and its mouth too small to permit its seizing things that are large ; however, it makes up by its courage and activity its want of arms ; it easily strangles a cat though stronger and larger than itself ; and often fights with dogs,

which, though never so bold, learn to dread the Ichneumon as a formidable enemy. It also takes the water like the otter, and, as we are told, will continue under it much longer.

This animal grows fast and dies soon. It is found in great numbers in all the southern parts of Asia, from Egypt to Java; and it is also found in Africa, particularly at the Cape of Good Hope. It is domestic, as was said, in Egypt, but in our colder climate, it is not easy to breed or maintain them, as they are not able to support the rigor of our winters.—Nevertheless they take every precaution that instinct can dictate to keep themselves warm; they wrap themselves up into a ball, hiding the head between the legs, and in this manner continue to sleep all day long. “Seba had one sent him from the island of Ceylon, which he permitted to run for some months about the house. It was heavy and slothful by day, and often could not be awakened even with a blow; but it made up this indolence by its nocturnal activity, smelling about without either being wholly tame or wholly mischievous. It climbed up the walls and the trees with very great ease, and appeared extremely fond of spiders and worms, which it preferred probably from their resemblance to serpents, its most natural food. It was also particularly eager to scratch up holes in the ground; and this, added to its wildness and uncleanness, obliged our naturalist to smother it in spirits in order to preserve, and added it to the rest of his collection.”

This animal was one of those formerly worshipped by the Egyptians, who considered every thing that was serviceable to them as an emanation of the Deity, and worshipped such as the best representatives of God below. Indeed, if we consider the number of eggs which the crocodile lays in the sand at a time, which often amounts to three or four hundred, we have reason to admire this little animal's usefulness as well as industry in destroying them, since otherwise the crocodile might be produced in sufficient numbers to overrun the whole earth.

The Polecat, Civet, and Glutton, have been described in the first volume of this work, to which the reader is referred.

THE WATTLED TALEGALLA.

PLATE XLIII.

Class—Aves. *Order*—Gallinaceæ: belonging to the hen.

Genus—Talegalla: M. Lessor. Catheturus Australis: Mr. Swainson.

How far this bird's range may extend over Australia is not yet satisfactorily ascertained; it is known to inhabit various parts of New South Wales, from Cape How on the south to Moreton Bay on the north; but the assaults of the cedar-cutters and others who so frequently hunt through the brushes of Illawarra and Maitland, having nearly extirpated it from those localities, it is now most plentiful in the dense and little-trodden brushes of the Manning and Clarence. I was at first, (says Mr. Gould, from whose History of Birds this article has been taken), led to believe that the country between the mountain ranges and the coast constituted its sole habitat; but I was agreeably surprised to find it also an inhabitant of the scrubby gullies and sides of the lower hills that branch off from the great range into the interior. I procured specimens on the Brezi range to the north of Liverpool Plains, and ascertained that it was abundant in all the hills on either side of the Namoi.

“It is a gregarious bird, generally moving about in small companies, much after the manner of the *Gallinaceæ*, and, like some species of that tribe, is very shy and distrustful.—When disturbed it readily eludes pursuit by the facility with which it runs through the tangled brush. If hard pressed, or when rushed upon by its great enemy the native dog, the whole company spring upon the lowermost bough of some neighboring tree, and by a succession of leaps from branch to branch ascend to the top, and either perch there or fly off to another part of the brush. They are also in the habit of resorting to the branches of trees as a shelter from the mid-day

The W. H. & T. Co. N. Y.



sun, a peculiarity that greatly tends to their destruction, as the sportsman is not only enabled to take a certain aim, but, like the ruffed grouse of America, they will even allow a succession of shots to be fired until they are all brought down. Unless some measures be adopted for their preservation, this circumstance must lead to an early extinction of the race: an event much to be regretted, since, independently of its being an interesting bird for the aviary, its flesh is extremely delicate, tender, and juicy.

"The most remarkable circumstances connected with the economy of this bird, are the fact of its not hatching its eggs by incubation, and the means resorted to for effecting this object, which, although in some degree assimilating to the practice of the ostrich, are yet upon a totally different principle. The Wattled Talegalla collects together an immense heap of decaying vegetable matter as a depositary for the eggs, and trusts to the heat engendered by the process of decomposition for the development of the young. The heap employed for this purpose is collected by the birds during several weeks previous to the period of laying; it varies in size from two to four cart-loads, and is of a perfectly pyramidal form. The construction of the mound is not the work of one pair of birds, but is effected by the united labors of several; the same site appears to me, from the great size and the entire decomposition of the lower part, to be resorted to for several years in succession, the birds adding a fresh supply of materials on each occasion previous to laying.

"The mode in which the materials composing these mounds are accumulated is equally singular—the bird never using its bill, but always grasping a quantity in its foot, throwing it backwards to one common centre, and thus clearing the surface of the ground for a considerable distance so completely, that scarcely a leaf or a blade of grass is left. The heap being accumulated, and time allowed for a sufficient heat to be engendered, the eggs are deposited, not side by side, as is ordinarily the case, but planted at the distance of nine or twelve inches from each other, and buried at nearly an arm's

depth, perfectly upright, with the large end upwards ; they are covered up as they are laid, and allowed to remain until hatched. I have been credibly informed both by natives and settlers living near their haunts, that it is not an unusual event to obtain nearly a bushel of eggs at one time from a single heap ; and as they are delicious eating, they are eagerly sought after. Some of the natives state that the females are constantly in the neighborhood of the heap about the time the young are likely to be hatched, and frequently uncover and cover them up again, apparently for the purpose of assisting those that may have appeared ; while others have informed me that the eggs are merely deposited, and the young allowed to force their way unassisted. In all probability, as nature has adopted this mode of reproduction, she has also furnished the tender birds with the power of sustaining themselves from the earliest period ; and the great size of the egg would equally lead to this conclusion, since in so large a space it is reasonable to suppose that the bird would be much more developed than is usually found in eggs of smaller dimensions. In further confirmation of this point, I may add, that in searching for eggs in one of the mounds I discovered the remains of a young bird, apparently just excluded from the shell, and which was clothed with feathers, not with down, as is usually the case : it is to be hoped that those who are resident in Australia, in situations favorable for investigating the subject, will direct their attention to the further elucidation of these interesting points. The upright position of the eggs tends to strengthen the opinion that they are never disturbed after being deposited, as it is well known that the eggs of birds which are placed horizontally are frequently turned during incubation. Although, unfortunately, I was almost too late for the breeding season, I nevertheless saw several of the heaps, both in the interior and at Illawarra ; in every instance they were placed in the most retired and shady glens, and on the slope of a hill, the part above the nest being scratched clean, while all below remained untouched, as if the birds had found it more easy to convey the materials down than to

throw them up. In one instance only was I fortunate enough to find a perfect egg, although the shells of many from which the young had been excluded were placed in the manner I have described. At Illawarra they were rather deposited in the light vegetable mould than among the leaves which formed a considerable heap above them. The eggs are perfectly white, of a long oval form, three inches and three-quarters long by two inches and a half in diameter : a fine egg of this bird was subsequently presented to me by J. H. Plunkett, Esq., Attorney General, New South Wales.

"While stalking about the wood they frequently utter a rather loud clucking noise ; and in various parts of the brush I observed depressions in the earth, which the natives informed me were made by the birds in dusting themselves.

"The stomach is extremely muscular, and the crop of one dissected was filled with seeds, berries, and a few insects.

"I have already alluded to its capability for domestication ; and I have the gratification of adding, that a living specimen was in the possession of Mr. Alexander MacLeay for several years, during which it was mostly at large, and usually associated with the fowls in the poultry-yard. On my arrival at Sydney this venerable gentleman took me into his garden and showed me the bird, which, as if in its native woods, had for two successive years collected an immense mass of materials similar to those above described. The borders, lawn, and shrubbery over which it was allowed to range presented an appearance as if regularly swept, from the bird having scratched to one common centre every thing that lay upon the surface ; the mound in this case was about three feet and a half high, and ten feet over. On placing my arm in it, I found the heat to be about 90° or 95° Fahr. The bird itself was strutting about with a proud and majestic air, sometimes parading round the heap, at others perching on the top, and displaying its brilliantly colored neck and wattle to the greatest advantage ; this wattle it has the power of expanding and contracting at will ; at one moment it is scarcely visible, while at another it is extremely prominent.

"Before I left New South Wales, Mr. MacLeay's bird had met with an untimely end by falling into a tank or water-butt, occasioned, it was conjectured, by seeing the reflection of its own image in the water, and rushing forward to meet a supposed antagonist. On dissection this individual was found to be a male, thereby proving that the sexes are equally employed in forming the mound for the reception of the eggs.

"After all the facts that have been stated, I trust it will be evident that its natural situation is among the Rasores, and that it forms one of a great family of birds peculiar to Australia and the Indian islands, of which *Megapodius* forms a part; and in confirmation of this view I may add, that the sternum has the two deep emarginations so truly characteristic of the Gallinacæ; at all events, it is in no way allied to the *Vulturidæ*, and is nearly as far removed from *Menura*.

"The adults have the whole of the upper surface, wings and tail, blackish brown; the feathers of the under surface blackish brown at the base, becoming silvery grey at the tip; skin of the head and neck deep pink red, thinly sprinkled with short hair-like blackish brown feathers; wattle bright yellow, tinged with red where it unites with the red of the neck; bill black; irides and feet brown.

"The female, which is about a fourth less than the male in size, is so closely the same in color as to render a separate description unnecessary. She also possesses the wattle, but not to so great an extent."

Closely related to the preceding species, but inhabiting a very different locality, is the Ocellated *Leipoa* (*Leipoa ocellata*), or "Ngow-oo" of the aborigines.

"The Ocellated *Leipoa* appears to be more peculiarly suited for a plain and open country than for the tangled brush; and it is most curious to observe how beautifully the means employed by nature for the reproduction of the species is adapted to the situations it is destined to inhabit. A sketch of its economy, as far as it has yet been ascertained, has been sent me, continues Mr. Gould, by Mr. John Gilbert, and is here given in his own words:

“The following account of the habits, manners, and nidification of this bird have been detailed to me by G. Moore, Esq., advocate-general, Mr. Armstrong, the aboriginal interpreter, and some of the more intelligent natives of Western Australia. Mr. Moore saw a great many of them about sixty miles north of Perth; but its most favorite country appears to be the barren sandy plains of the interior, 100 miles north and east of York. It is a ground bird, never taking to a tree except when closely hunted; when pursued it will frequently run its head into a bush, and is then easily taken. In its actions and manners it is very like the domestic fowl. Its food generally consists of seeds and berries. It has a mournful note, very like that of a pigeon, but with a more inward tone. The eggs are deposited in a mound of sand, the formation of which is the work of both sexes: the natives say they scratch up the sand for many yards around, forming a mound of about three feet in height; the inside being constructed of alternate layers of dried leaves, grasses, &c., among which the eggs are deposited to the number of twelve and upwards, and covered up by the birds as laid; or, as the natives express it, “the countenances of the eggs are never visible.” The bird never sits upon the eggs; but when she has laid her number, the whole are covered up, after which the mound of sand resembles an ant’s nest. The eggs are hatched by the heat of the sun’s rays, the vegetable lining of the hillock retaining sufficient warmth during the night: the eggs are deposited in layers, no two eggs being suffered to lie without a division. They are about the size of a fowl’s egg, and are white, very slightly tinged with red. The natives are exceedingly fond of them, and rob the mounds two or three times in a season; they judge of the probable number of eggs in the heap by the quantity of feathers lying around. If these are abundant, they know the hillock is full, when they immediately open it, and take the whole; upon which the bird will again commence laying, to be robbed a second time, and will frequently lay a third time. Upon questioning one of the men attached to Mr. Moore’s expedition, he gave me a similar

account of its habits and mode of incubating ; adding, that in all the mounds they opened, they found ants almost as numerous as in an ant-hill, and that in many instances that part of the mound surrounding the lower portion of the eggs had become so hard, they were obliged to chip round them with a chisel to get them out : the inside of the mounds were always hot.

“The farthest point north,’ says Captain Grey, ‘at which I have seen the breeding places of this bird, is Gantheaume Bay. The natives of King George’s Sound say the same, or a nearly-allied species, exists in that neighborhood. I have never fallen in with its nest but in one description of country, viz., where the soil was dry and sandy, and so thickly wooded with a species of dwarf *Leptospermum*, that if you stray from the native paths, it is almost impossible to force your way through. In these close scrubby woods small open glades occasionally occur, and here the Ngow-oo constructs its nest, a large heap of sand, dead grass and boughs, at least nine feet in diameter, and three feet in height : I have seen them even larger than this. Upon one occasion only I saw eggs in these nests ; they were placed some distance from each other, and buried in the earth. I am not sure of the number, but the account given by the natives led me to believe that at times large numbers are found.’

“The Ocellated Leipoa is altogether a more slender and elegantly formed bird than the Wattled Talegalla, and moreover differs from that bird in having the head and neck thickly clothed with feathers, and in being adorned with a beautifully variegated style of coloring.”

The circumstance of these two birds constructing an “Eccaleobion,” in which to mature their eggs, is not a little remarkable. We are indeed, as Mr. Gould observes, reminded of the ostrich. But the ostrich, of which several females combine to make a shallow dish, or bowl in the sand, for the common reception of their eggs, incubates, at least in Southern Africa, like other birds, the females relieving each other during the day, and the male taking his turn at night ; and

even within the torrid zone, where the heat of the sand during the day is sufficient, the female generally covers them during the night. The ostrich, however, makes no artificial hot-bed, no eccaleobion for her eggs; nor know we of any birds, excepting these two Australian species, in which instinct prompts to so strange and interesting a procedure.

THE PLOVER.

PLATE XLIV.

Class—Aves. *Order*—Grallae: waders. *Genus*—Charadrius. *Species*—There are eight different species of the Plover in the United States.

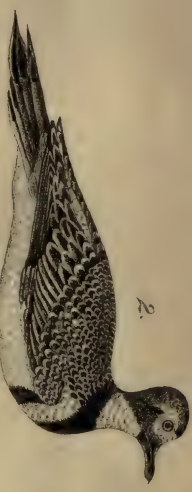
The Ring Plover (*C. Hiaticula*) is very abundant on the low sandy shores of our whole sea-coast, during the summer. They run, or rather seem to glide, rapidly along the surface of the flat sands; frequently spreading out their wings and tail like a fan, and fluttering along, to draw or entice one away from their nests. These are formed with little art; being merely shallow concavities dug in the sand, in which the eggs are laid, and, during the day at least, left to the influence of the sun to hatch them.

The parents, however, always remain near the spot to protect them from injury, and probably in cold, rainy or stormy weather, to shelter them with their bodies. The eggs are three, sometimes four, large for the bird, of a dun clay color, and marked with numerous small spots of reddish purple.

The voice of these little birds, as they move along the sand, is soft and musical, consisting of a single plaintive note occasionally repeated. As you approach near their nests, they seem to court your attention, and the moment they think you observe them, they spread out their wings and tail, dragging themselves along, and imitating the squeaking of young birds; if you turn from them they immediately resume their proper posture until they have again caught your eye, when they display the same attempts at deception as before. A flat dry sandy beach, just beyond the reach of the summer tides, is their favorite place for breeding.

This species is subject to great variety of change in its plumage. In the month of July, says Mr. Wilson, I found most of those that were breeding on Summer's Beach, at the mouth

2.



1. Golden P.

1. Golden P.

Stevens.

2. Kilder P.

2. Kilder P.



of Great Egg-Harbor; but about the beginning or middle of October they had become much darker above, and their plumage otherwise varied. They were then collected in flocks; their former theatrical and deceptive manœuvres seemed all forgotten. They appeared more active than before, as well as more silent; alighting within a short distance of one, and feeding about without the least appearance of suspicion. At the commencement of winter they all go off towards the south.

This variety of the Ringed Plover is seven inches long, and fourteen in extent; the bill is reddish yellow for half its length, and black at the extremity; the front and whole lower parts pure white, except the side of the breast, which is marked with a curving streak of black, another spot of black bounding the front above, back and upper parts very pale brown, inclining to ashy white, and intermixed with white; wings pale brown, greater coverts broadly tipped with white; interior edges of the secondaries, and outer edges of the primaries white, and tipped with brown: tail nearly even, the lower half white, brown towards the extremity, the outer feather pure white, the next white with a single spot of black; eye black, and full, surrounded by a narrow ring of yellow; legs reddish yellow; claws black; lower side of the wings pure white.

The present species, or true Ring Plover, and also the former, or light colored bird, both arrive on the seacoast of New Jersey late in April. The present kind continues to be seen in flocks until late in May, when they disappear on their way farther north; the light-colored bird remains during the summer, forms its nest in the sand, and generally produces two broods in the season. Early in September the present species return in flocks as before; soon after this, the light-colored kind go off to the south, but the other remain a full month later. European writers inform us, that the Ring Plover has a sharp twittering note, and this account agrees exactly with that of the present; the light colored species, on the contrary, has a peculiar soft and musical tone, similar to the

tone of a German flute which it utters while running along the sand, with expanding tail, and hanging wings, endeavoring to decoy you from its nest.

The species called Wilson's Plover is a bird which very much resembles the Ring Plovers, except in the length and color of the bill, its size, and in wanting the yellow eyelids. The males and females of this species differ in their markings, but the Ring Plovers nearly agree. We, says Mr. Wilson, conversed with some sportsmen of Cape May, who asserted that they were acquainted with these birds, and that they sometimes made their appearance in flocks of considerable numbers; others had no knowledge of them. That the species is rare, we were well convinced, as we had diligently explored the shore of a considerable part of Cape May, in the vicinity of Great Egg-harbor, many times, at different seasons, and had never seen them before. How long they remain on our coast, and where they winter, we are unable to say. From the circumstance of the oviduct of the female being greatly enlarged, and containing an egg half grown, apparently within a week of being ready for exclusion, we concluded that they breed there. Their favorite places of resort appear to be the dry sand flats on the seashore. They utter an agreeable piping note; and run swiftly.

This species (see No. 1, Plate 44) is eight inches in length and fifteen and a half in extent; the bill is black, stout, and an inch long, the upper mandible projecting considerably over the lower; front white, passing on each side to the middle of the eye above, and bounded by a band of black of equal breadth; lores black: eyelids white; eye large and dark; from the middle of the eye, backwards, the stripe of white becomes duller, and extends for half an inch; the crown, hind-head and auriculars, are drab olive; the chin, throat, and sides of the neck for an inch, pure white, passing quite round the neck, and narrowing to a point behind; the upper breast below this is marked with a broad band of jet black; the rest of the lower parts pure white; upper parts pale olive drab; along the edges of the auriculars, and hind-head, the plumage,

where it joins the white, is stained with raw terra sienna ; all the plumage is darkest in the centre ; the tertials are fully longer than the primaries, the latter brownish black, the shafts and edges of some of the middle ones white ; the legs are of a pale flesh color ; toes bordered with a narrow edge ; claws and ends of the toes black ; the tail is even, a very little longer than the wings, and of a blackish olive color, with the exception of the two exterior feathers, which are whitish, but generally only the two middle ones are seen.

The female differs in having no black on the forehead, lores, or breast, these parts being pale olive.

The Kildeer Plover (*C. Vociferus*), a restless and noisy bird, is known to almost every inhabitant of the United States, being a common and pretty resident. During the severity of winter, when snow covers the ground, it retreats to the seashore, where it is found at all seasons ; but no sooner have the rivers broke up, than its shrill note is again heard, either roaming about high in air, tracing the shore of the river, or running amidst the watery flats and meadows. As spring advances, it resorts to the newly ploughed fields, or level plains bare of grass, interspersed with shallow pools ; or, in the vicinity of the sea, dry bare sandy fields. In some such situation it generally chooses to breed, about the beginning of May. The nest is usually slight, a mere hollow, with such materials drawn in around it as happen to be near, such as bits of sticks, straw, pebbles, or earth. In one instance, I found the nest of this bird paved with fragments of clam and oyster shells, and very neatly surrounded with a mound or border of the same, placed in a very close and curious manner. In some cases there is no vestige whatever of a nest. The eggs are usually four, of a rich cream, or yellowish clay color, thickly marked with blotches of black. They are large for the size of the bird, measuring more than an inch and a half in length, and a full inch in width, tapering to a narrow point at the great end.

Nothing can exceed the alarm and anxiety of these birds during the breeding season. Their cries of *kildeer, kildeer*, as they winnow the air over head, dive and course around you,

or run along the ground, counterfeiting lameness, are shrill and incessant. The moment they see a person approach, they fly or run to attack him with their harassing clamor, continuing it over so wide an extent of ground, that they puzzle the pursuer as to the particular spot where the nest or young are concealed; very much resembling, in this respect, the Lapwing of Europe. During the evening, and long after dusk, particularly in moonlight, their cries are frequently heard with equal violence, both in the spring and fall. From this circumstance, and their flying about both after dusk and before dawn, it appears probable that they see better at such times than most of their tribe. They are known to feed much on worms, and many of these rise to the surface during the night. The prowling of owls, may also alarm their fears for their young at those hours; but whatever may be the cause, the facts are so.

The Kildeer (see No. 2, Plate 44) is ten inches long, and twenty inches in extent; the bill is black; frontlet, chin, and ring round the neck, white; fore part of the crown, and auriculars from the bill backwards, blackish olive; eyelids bright scarlet; eye very large, and of a full black; from the centre of the eye backwards a stripe of white; round the lower part of the neck is a broad band of black; below that a band of white, succeeded by another rounding band or crescent of black; rest of the lower parts pure white; crown and hind-head light olive brown; back, scapulars, and wing-coverts, olive brown, skirted with brownish yellow; primary quills black; streaked across the middle with white; bastard wing-tipt with white; greater coverts broadly tipt with white; rump and tail-coverts orange; tail tapering, dull orange, crossed near the end with a broad bar of black, and tipt with orange, the two middle feathers near an inch longer than the adjoining ones; legs and feet a pale light clay color. The tertials, as usual in this tribe, are very long, reaching nearly to the tips of the primaries; exterior toe joined by a membrane to the middle one, as far as the first joint.

The Black-bellied Plover (*C. Apricarius*) is known in some parts of the country by the name of the large Whistling Field Plover. It generally makes its first appearance in Pennsylvania late in April; frequents the countries towards the mountains; seems particularly attached to newly ploughed fields, where it forms its nest of a few slight materials, as slightly put together. The female lays four eggs, large for the size of the bird, of a light olive color, dashed with black; and has frequently two broods in the same season. It is an extremely shy and watchful bird, though clamorous during breeding time. The young are without the black color on the breast and belly until the second year; and the colors of the plumage above are likewise imperfect till then. They feed on worms, grubs, winged insects, and various kinds of berries, particularly those usually called dew-berries, and are at such times considered exquisite eating. About the beginning of September, they descend with their young to the seacoast, and associate with the numerous multitudes then returning from their breeding places in the north. At this season they abound on the plains of Long Island. They have a loud whistling note; often fly at a great height; and are called by many gunners along the coast, the Black-bellied Kildeer. The young of the first year have considerable resemblance to those of the Golden Plover; but may be easily distinguished from this last by the largeness of their head and bill, and in being at least two inches more in length.

The history of another species called the Sanderling Plover (*C. Calidris*.) has little in it to excite our interest or attention. It makes its appearance on our seacoasts early in September; continues the greater part of the winter; and on the approach of spring, returns to the northern regions to breed. While here, it seems perpetually busy, running along the wave-worn strand, following the flux and reflux of the surf, eagerly picking up its food from the sand, amid the roar of the ocean. It flies in numerous flocks, keeping a low meandering course along the ridges of the tumbling surf. On alighting, the whole scatter about after the receding wave, busily picking up

those minute bivalves already described. As the succeeding wave returns, it bears the whole of them before it in one crowded line ; then is the moment seized by the experienced gunner to sweep them in flank, with his destructive shot. The flying survivors, after a few aerial meanders, again alight, and pursue their usual avocation, as busily and unconcernedly as before. These birds are most numerous on extensive sandy beaches in front of the ocean. Among rocks, marshes, or stones covered with sea-weed, they seldom make their appearance.

There is another species called the Ruddy Plover (*C. Rubidus*.) which is frequently found in company with the Sanderling, which, except in color, it very much resembles. It is generally seen on the seacoast of New Jersey in May and October, on its way to and from its breeding place in the north. It runs with great activity along the edge of the flowing or retreating waves, on the sands, picking up the small bivalve shellfish, which supply so many multitudes of the Plover and Sandpiper tribes.

I should not be surprised if the present species turn out hereafter to be the Sanderling itself, in a different dress. Of many scores which I examined, scarce two were alike ; in some the plumage of the back was almost plain ; in others the black plumage was just shooting out. This was in the month of October. Naturalists, however, have considered it as a separate species ; but have given us no further particulars, than that "in Hudson's Bay it is known by the name of Mistchaychekiskaweshish," a piece of information certainly very instructive !



Hunting the Perry.

THE PECCARY.

PLATE XLV.

Class—Mammalia. *Order*—Pachydermata : thick skinned.

Genus—Sues. *Species*—*Dieotyles torquatus*, and *D. labiatus* : *Cuvier*.

THE Peccaries, although bearing a close affinity both in external form and internal structure to the common hog, are nevertheless distinguished from that well known beast by several striking characters, of sufficient importance, when taken in conjunction with their transatlantic origin, to justify their separation as a distinct genus. The most essential of these characters consist in the number and direction of their teeth, the structure of their hinder feet, the form of their head and snout, the shortness and flatness of their tail, and the existence of a peculiar glandular apparatus. They have in the upper jaw four incisor teeth instead of six, the number found in the pigs of the Old World ; and six in the lower. Of these the two outer are separated from the intermediate ones by a vacant space, and are smaller in size and of a more conical form. Before the canines of each jaw there occurs another interval, which is occupied in the upper, when the mouth is closed, by the canine of the lower ; while that of the upper projects from the mouth in the form of a tusk, and is not received into any corresponding groove. These teeth are from an inch to an inch and a quarter in length, strong, thick, and triangular. They are succeeded by a third interval, behind which, on each side of either jaw, are ranged six nearly equal molars, instead of seven, the number met with in the common hog.

In the latter all the feet are well known to be formed of two anterior toes, and these are, properly speaking, intermediate between two others which take a backward direction, are much smaller in size, and placed so much above the level

- of the foot as seldom to touch the ground in walking. The same structure is observed in the Peccaries, with the exception that on their hind feet the outer one of the smaller or posterior toes is entirely wanting, and they have consequently but three toes instead of four. Their head is shorter and broader than that of the hog ; but the moveable snout by which their face is terminated, is proportionally longer, and its flat and truncated extremity is bordered by a more expanded margin. The legs are also slenderer in their proportions ; and the tail, which is scarcely visible among the bristles, instead of being taper, conical, and curled upwards, is extremely short, remarkably flat, and completely pendulous. But the most striking distinction between them and every other known species of quadruped appears to consist in a large gland placed immediately beneath the skin on the middle of the loins, and readily discernible on turning up the long bristles by which it is covered. This operation is, however, far from pleasant, and is besides by no means indispensable ; the filthy and disgusting smell emitted by the fluid which is secreted by the gland in large quantities, furnishing of itself a sufficient, and to any sensible nostril a perfectly satisfactory indication of its existence.

The Peccaries resemble the common hog not more in their form and structure than in their habits, dispositions, and propensities. Their gait is almost precisely similar ; they burrow in the earth after the same fashion ; eat and drink in the same swinish manner ; are fond of the same description of food ; elevate their long bristles like him when terrified or angry ; breathe with the same violent effort ; and express their feelings with the same peculiar grunt. They are also equally susceptible of domestication ; or, perhaps we should rather say much more so, if we adopt the wild boar as the type of the domesticated race. When taken young they readily become habituated to the society of man ; take as much delight as our pigs in being scratched and scrubbed ; and are speedily reduced to a state of complete subservience. They are not, however, likely ever to become so useful in the farm-yard, for

not to speak of their fetid gland, which is said to communicate a very disagreeable savor to their flesh if not removed immediately after death, the flesh itself is decidedly inferior to pork both in flavor and fatness: their productiveness, also, bears no comparison to that of the sow, the female bringing forth but once a year, and producing no more than two young ones at a birth. The experiment of breeding them has, however, we are informed, been tried in various parts of the continent of South America, and in some of the West India Islands; but we are not aware of the extent to which it has succeeded, or whether the project has not been altogether laid aside.

Both the species of this group appear to be more or less common throughout the whole of South America. They inhabit only the thickest and most extensive forests, and take up their dwellings in the hollows of trees or in burrows formed in the earth by other animals. They are rarely found in any considerable numbers in the neighborhood of villages, but sometimes commit great devastation among the sugar-canes, the maize, the manihot, and the potatoe crops. They are generally said to be extremely savage, but the difference between the two species in this respect, as well as in various other particulars of manners and disposition, appears to be even more strongly marked than that which distinguishes their external form.

The Collared Peccary is smaller than the other species, seldom measuring fully three feet in length, and rarely weighing more than fifty pounds. Its general color is a yellowish gray, resulting from the manner in which the bristles are marked by alternate rings of grayish straw-color and black. A row of long black bristles extends backwards from between the ears, forming a somewhat erectile mane on the back of the neck, and becoming gradually longer as they approach the tail. The face is more grizzled with yellow than any other part, with the exception of a narrow oblique line of yellow-pointed hairs, which passes from behind the shoulders to the fore part of the neck, and from which the specific name of

the animal is derived. The color of the legs, as well as of the hoofs which envelope the extremities of the toes, is nearly black. The head is extremely long, the profile forming almost a straight line from between the ears to the extremity of the nose, which projects considerably beyond the mouth, is very moveable, and terminates abruptly in a broad and flat expansion, in which the large open nostrils are placed far apart from each other. The ears are small, upright, nearly naked, and of a grayish color. On the legs and muzzle the hairs are extremely short. The color of the young ones is for the first year of a uniform reddish brown.

The Collared Peccary is not a migratory animal. It generally passes its life in the forest in which it first saw the light where it is usually met with in pairs or in small families. They subsist for the most part on vegetable food, chiefly roots which they procure by burrowing in the earth. They will, however, sometimes feed upon fish and reptiles, and are said to be dexterous in destroying serpents. Their peculiar grunt is heard at a considerable distance; but they are more easily traced by the nose than by the ear. The places which they inhabit, or even those through which they merely pass, are absolutely infected with the pungent odor of the liquid which is secreted by their dorsal gland: it is a certain direction to those who are in quest of them, and affords the greatest facility in their pursuit. D'Azara seems to have had an unaccountable partiality for this smell, which he first describes as a "musky scent," and afterwards, as if this were not sufficient, rates Buffon severely for calling it an unsavoury odour, and quotes the authority of Ray (which should have been Tyson) and others for its being "musky, sweet, and agreeable." He admits, however, that the animal may exhale different odors according to the quality of its nutriment, its state of irritation, or a variety of other circumstances.

When reduced to a state of captivity, the Peccaries, as we have said before, become perfectly tame and domesticated. A pair of them which were in the French Menagerie lived upon the best terms with the dogs and all the other domestic ani-

mals; they returned of their own accord to their sty; came when they were called; and appeared fond of being noticed. But they were also fond of their liberty, and tried to escape, and sometimes even to bite, when they were forcibly driven into their place of confinement. They were fed upon bread and fruits, but ate of every thing that was offered them like the common pig. When frightened they uttered a sharp cry, and testified their satisfaction by a low grunt.

The White-lipped Peccary is exclusively known in Guiana by the name of Peccary. In size it is considerably larger than the other species, frequently measuring three feet and a half in length, and sometimes attaining the weight of a hundred pounds. In form and proportions it is thicker and stouter, with shorter legs, and longer snout; and the abrupt termination of that part is still more expanded and flattened out than that of the Collared Peccary. In its color it has little of the grayish tinge which characterizes the latter, the black hairs of the back and sides having only a few brownish rings, which are rather more thickly spread on the sides of the head beneath the ears. These organs are less remarkable than in the other species in consequence partly of the greater length of the mane, which advances forward between them, and is continued down the back towards the tail, the bristles of which it is composed being very thick and somewhat flattened. The whiskers consist of long black scattered bristles; and a few others of a similar description project just above the eyes. The whole of the under lip, together with the sides of the mouth and the upper surface of the nose, are white. The legs and hoofs are black; and the latter are long and narrow, the posterior one of the hinder feet almost touching the ground. The tusks are longer and more visible externally than in the Patira. In the young animal the livery is more varied, being in some degree striped like that of the young wild boar of Europe; but these stripes are lost by degrees as the animal advances in age, and few traces of them remain after the first year.

Unlike the former species the White-lipped Peccaries con-

gregate in numerous bands, sometimes amounting, it is said, to more than a thousand individuals of all ages. Thus united they frequently traverse extensive districts, the whole troop occupying an extent of a league in length, and directed in their march, if the accounts of the natives are to be credited, by a leader, who takes his station at the head of the foremost rank. Should they be impeded in their progress by a river, the chief stops for a moment, and then plunges boldly into the stream, and is followed by all the rest of the troop. The breadth of the river or the rapidity of the current appear to be but trifling obstacles in their way, and to be overcome with the greatest facility. On reaching the opposite bank they proceed directly on their course, and continue their march even through the plantations which, unfortunately for the owners, may happen to lie in their way; and which they sometimes completely devastate by rooting in the ground for their favorite food, or devouring such fruits as they find there. If they meet with anything unusual on their way, they make a terrific clattering with their teeth, and stop and examine the object of their alarm. When they have ascertained that there is no danger, they continue their route without further delay; but if a huntsman should venture to attack them when they are thus assembled in large numbers, he is sure to be surrounded by multitudes and torn to pieces by their tusks, if he is so unwise as to neglect his only chance of escape, which consists in climbing a tree, and thus getting fairly out of their reach. The smaller bands are by no means equally courageous, and always take to flight at the first attack.

M. Sonnini relates that he was often, in the course of his travels in Guiana, surrounded by a troop of Peccaries infuriated with the havoc made by the muskets of himself and his companions. Mounted upon a tree he was enabled to observe their motions, and to notice the manner in which they encouraged by their grunts and by the rubbing of their snouts together those among them who were injured by the shots which were poured upon them from above. With erected bristles and eyes sparkling with rage, they still maintained their

ground ; and it was sometimes only after two or three hours incessant firing that they were at last compelled to quit the field of battle, and to leave the bodies of the dead to the mercy of the conquerors. These days of victory over the Peccaries, he adds, are always days of abundance for the traveller in those immense forests, who has no other resource except the chase. An enormous gridiron is immediately constructed with sticks fixed in the earth, and three feet in height, over which a quantity of small branches are placed in a transverse direction. On these the Peccaries are deposited after being cut in pieces, and are cooked by a slow fire, which is kept up during the whole night. From the enthusiasm with which our author speaks of his desert feasts, and the regret which he expresses that he is no longer a sharer in them, we may readily imagine that, under the circumstances in which he partook of them, they must have been an exquisite treat. It does not, however, follow as a necessary consequence that in other places and at other times he might have been so well disposed to relish these delicacies of the forest.

It has been generally said that the secretion from its dorsal gland is inodorous ; but M. Sonnini makes no distinction in this respect between the two.

THE PLATYPUS.

PLATE XLVI.

Class—Mammalia. *Order*—It has been called *Ornithorhynchus* by some, and *Aroatinus* by others. *Oenus*—*Platypus*.

AMONG the strange and interesting productions of that little explored country, Australia, not one is so anomalous, so wonderful, such a stumbling-block to the naturalist, as the *Ornithorhynchus*, *Platypus*, or, as it is termed by the colonists, the *Water-mole*. Its first discovery created the utmost surprise; nor has the feeling much abated. The *Ornithorhynchus* is essentially aquatic in its habits, frequenting the more tranquil or currentless portions of the rivers, in the banks of which it excavates its burrow to a considerable depth. If we examine the animal we shall see how well it is adapted for such a mode of life. The total length of the adult *Ornithorhynchus* is about one foot six or seven inches; the body is long, reminding one not only in shape but in color of the otter. It is covered with a double coat of fur, like aquatic mammalia in general: the outer vest consists of long, fine glossy hair, thickly set, which in some individuals assumes a crisped appearance; beneath this, close to the skin, is a layer of short soft fur, forming an almost water-proof wadding.—The tail, which is broad and flattened, terminates abruptly, and is covered above with longer and coarser hairs than those of the body; the under surface of the tail, however, is almost destitute of covering—at least the hairs are short and thinly set.

The limbs are remarkable for their strength and shortness; the anterior pair especially are very muscular, and the feet well adapted for burrowing, notwithstanding their being largely webbed. The toes are five in number, and terminate in strong blunt claws, capable of scratching the earth with



1000

great facility ; the web which intervenes between the toes is of a tough leathery consistence, and from its extending beyond the claws might seem to be an impediment in the way of these instruments being fairly and effectually used. It would appear, however, that being loose it falls back, (being perhaps voluntarily retained so,) while the creature is engaged in its laborious task of burrowing, so as not to interfere with the due application of the claws. The advantage of this broad web in an aquatic animal, or one that spends so great a portion of its existence in the water, is very apparent. The hind feet are smaller than the anterior, but also webbed, though the membrane does not extend beyond the roots of the claws, which are sharp and longer than those of the fore-feet. On the hind leg of the male there is, as its peculiar characteristic, a strong sharp spur, the use of which does not appear to be very easy of explanation. It is certainly not used as a weapon of offence ; nor are the scratches made by it, during the struggles of the animal, on the hands of those who endeavor to hold it, attended with the slightest ill consequence. Formerly this spur was supposed to be a poisoned weapon, by which dangerous, if not fatal wounds were inflicted. This is most certainly not the case. It appears that the mistake arose from the misapplication of English words or expressions by the aborigines.

The most singular part of the *Ornithorhynchus*, however, is the head ; at least as regards the external configuration of the animal. Instead of terminating in a snout, as in other mammalia, it is continued into a *beak* resembling that of a *duck*, being broad, compressed, and rounded at the lip ; the mandibles of which this beak consists are covered with a cartilaginous or leathery membrane—the outside of the upper membrane being greyish black—the palate flesh-color ; the under mandible is flesh-color within, and whitish externally. The edges of both are soft, and the lower, which is shorter and narrower than the upper, has its sides internally channelled with grooves like those of a duck, but larger and wider apart. At the base of the beak a loose leathery flap projects

from each mandible, and may perhaps form a protection to the eyes, while the animal is engaged in searching for food with the beak plunged deep in the mud. True teeth there are none; there are, however, in each mandible, on either side, two horny appendages without roots,—one tuberculous, and at the base of the mandible fairly within the mouth,—the other forming a long narrow ridge on the mandible itself. The tongue is short and thick, and covered with *papillæ*.—The eyes are small but bright; and the orifice of the ears is capable of being closed or opened at pleasure. The flesh of this strange animal, though rank and fishy, is eaten by the aborigines, to whom nothing indeed is unacceptable.

The caution of the *Ornithorhynchus*, conjoined with the acuteness of its senses, renders it a difficult mark for the sportsman; nor, except it be severely hit about the head, is it easily killed. If only wounded, it dives, and endeavors to make for its burrow, or rises amidst the dense herbage which luxuriates in such localities. When the animal is watched playfully sporting on the water, the slightest noise or movement is the signal for its disappearance,—nor, even when undisturbed, does it remain many minutes without diving;—the moment of its reappearance (the gun being levelled in the interim) is the only time for the sportsman. Mr. G. Bennett informs us that “these animals are seen in the Australian rivers at all seasons of the year; but a question may arise, whether they do not, in some degree, *hybernate*; for they are more abundant during the summer than in the winter months. When going down, they allow themselves to be carried along by the force of the stream, without making any exertion of their own; but, when swimming against the stream, all their muscular power is exerted to the utmost to stem the force of the current, and it is generally done effectively. I recollect, however, seeing two making repeated and ineffectual attempts to pass a small waterfall during a rapid current of the river, and, after many persevering efforts, they were unable to attain their object.” The habits of these animals have been detailed by no one so fully and satisfactorily

as by the writer above referred to. He procured, indeed, with considerable trouble, several living specimens, at different times, with a hope of being able to bring them to England, —a hope which was always frustrated. On one occasion, having opened a burrow to the extent of upwards of ten feet, (its course still continuing up the bank,) he captured one of these creatures, which, disturbed from its repose, had ventured to leave its nest at the extremity of the burrow, in order to reconnoitre the cause of the tumult. "When," says Mr. Bennet, "I held the unfortunate *Platypus* (*Ornithorhynchus*) in my hands, its bright little eyes glistened, and the orifices of its ears were expanded and contracted alternately, as if eager to catch the slightest sound, while its heart palpitated violently with fear and anxiety." It soon, however, became more reconciled to its situation, and "was placed in a cask with grass, mud taken from the river, and water, and everything that could make it comfortable under existing circumstances." At first it endeavored by scratching to get out, but soon became tranquil, contracted itself into a small compass, and sank to sleep. In the night it was again restless, but was asleep in the morning, "the tail being turned inwards, the head and beak under the breast, and the body contracted into a very small compass." This seemed its usual position during sleep; sometimes, however, the beak protruded. When disturbed, it uttered a low, soft growl, not unlike that of a puppy; this noise also accompanied its exertions to escape.

The burrow from which this individual was taken "ran up the bank in a serpentine course, approaching nearer the surface of the earth towards its termination, at which part the nest is situated. This is sufficiently large to accommodate the old animal and its young. No nest had yet been made in the termination of this burrow, for that appears to be formed about the time of bringing forth the young, and consists merely of dried grass, weeds, &c., strewed over the floor of this part of the habitation. The whole extent of the burrow, from the entrance to the termination, I found by actual measurement to be twenty feet." Yet no heaps of earth near the

burrow were observed by Mr. Bennett, nor does he know, as he says, "how, in the progress of excavation, the animal disposes of the loose mould:" perhaps it carries it to a distance, he goes on to observe, as the mason-wasp and carpenter-bee.

Arriving at Lansdown Park, Mr. Bennett observes, "Here I availed myself of the vicinity of some ponds (also inhabited by these animals,) to give it a little recreation. On opening the box it was lying in a corner contracted into a very small compass, and fast asleep. I tied a very long cord to its hind leg, and roused it, in return for which I received numerous growls. When placed on the bank it soon found the way into the water, and travelled up the stream, apparently delighting in those places which most abounded in aquatic weeds. Although it would dive in deep water, it appeared to prefer keeping close to the bank, occasionally thrusting its beak (with a motion similar to that of a duck when it feeds) among the mud, and at the roots of the various weeds lining the margin of the ponds, and which we may readily suppose to be the resort of insects. After it had wandered some distance up the chain of ponds, feeding about the shallow water and mud near the banks, it crawled up the bank, enjoyed the luxury of scratching itself, and rolling about. In this process of cleaning itself, the hind-claws were alone brought into use for the operation—first the claws of one hind-leg, then those of the other. The body being so capable of contraction was readily brought within reach of the hind-feet, and the head also was brought so close as to have its share in the universal cleaning process. The animal remained for more than an hour cleaning itself, after which it had a more sleek and glossy appearance.

On the 28th of December, Mr. Bennett visited a noble sheet of water, called Koroa, formed by the Wollondilly river, on the banks of which the burrow of an *Ornithorhynchus* was discovered. In opening it, "the aborigines used their hard pointed sticks, and although the ground was firm, they succeeded as quickly as we could have done with our spades." The method of laying open the burrow was by making holes

upon it, four or five feet apart, a stick being passed up the burrow as the work proceeded, in order to ascertain its direction. From this burrow he procured two full-furred young ones, a male and female, beautifully sleek and delicate, most probably having never left the burrow. They lived in captivity about five weeks: their liveliness, their frolics, and gambols affording a constant source of interest. "One evening, both the animals came out about dusk,—went as usual and ate food from the saucer,—and then commenced playing with one another like two puppies, attacking with their mandibles and raising the fore-paws against each other. In the struggle one would get thrust down, and, at the moment when the spectator would expect it to rise again and renew the combat, it would commence scratching itself, its antagonist looking on and waiting for the sport to be renewed. When running, they are exceedingly animated,—their little eyes glisten, and the orifices of their ears dilate and contract with rapidity; if taken into the hands at this time for examination, they struggle violently to escape, and their loose integuments render it difficult to retain them." They were found to sleep in various positions,—mostly rolled up like a hedgehog, into a ball, the tail being wrapped over the bill and head,—sometimes in an extended attitude. Their periods of activity were very irregular, but the dusk of evening in most cases called forth all their energies. During the night they were generally active: uight or evening we suspect to be the favorite period in which the *Ornithorhynchus* seeks its food, wanders along the bank, constructs its burrow, and gambols with its mate.

THE WOODPECKER.

PLATE XLVII.

Class—Aves. *Order*—Scanores: climbing. *Genus*—Picus.

Species—There are ten species of the Woodpecker in the United States.

The following article is from Wilson's Ornithology.

THIS majestic and formidable species, in strength and magnitude, stands at the head of the whole class of Woodpeckers hitherto discovered. He may be called the king or chief of his tribe; and Nature seems to have designed him a distinguished characteristic, in the superb carmine crest, and bill of polished ivory, with which she has ornamented him. His eye is brilliant and daring; and his whole frame so admirably adapted for his mode of life, and method of procuring subsistence, as to impress on the mind of the examiner the most reverential ideas of the Creator. His manners have also a dignity in them superior to the common herd of Woodpeckers. Trees, shrubbery, orchards, rails, fence-posts, and old prostrate logs, are alike interesting to those, in their humble and indefatigable search for prey; but the royal hunter now before us, scorns the humility of such situations, and seeks the most towering trees of the forest; seeming particularly attached to those prodigious cypress swamps, whose crowded giant sons stretch their bare and blasted, or moss-hung arms midway to the skies. In these almost inaccessible recesses, amid ruinous piles of impending timber, his trumpet-like note, and loud strokes, resound through the solitary, savage wilds, of which he seems the sole lord and inhabitant. Wherever he frequents, he leaves numerous monuments of his industry behind him. We there see enormous pine-trees, with cart-loads of bark lying around their roots, and chips of the trunk itself in such quantities, as to suggest the idea that half a dozen of axemen had been at work for the whole morning. The



Woodpeckers.

1. Yellow-bellied Sapsucker. 2. Red-bellied Sapsucker.

TO THE
REDACTED

body of the tree is also disfigured with such numerous and so large excavations, that one can hardly conceive it possible for the whole to be the work of a Woodpecker. With such strength, and an apparatus so powerful, what havoc might he not commit, if numerous, on the most useful of our forest trees; and yet with all these appearances, and much of vulgar prejudice against him, it may fairly be questioned whether he is at all injurious; or, at least, whether his exertions do not contribute most powerfully to the protection of our timber. Examine closely the tree where he has been at work, and you will soon perceive, that it is neither from motives of mischief nor amusement that he slices off the bark, or digs his way into the trunk.—For the sound and healthy tree is not in the least the object of his attention. The diseased, infested with insects, and hastening to putrefaction, are *his* favorites; there the deadly crawling enemy have formed a lodgement, between the bark and tender wood, to drink up the very vital part of the tree. It is the ravages of these vermin which the intelligent proprietor of the forest deplures, as the sole perpetrators of the destruction of his timber. Would it be believed that the larvæ of an insect, or fly, no larger than a grain of rice, should silently, and in one season, destroy some thousand acres of pine-trees, many of them from two to three feet in diameter, and a hundred and fifty feet high! Yet whoever passes along the high road from Georgetown to Charleston, in South Carolina, about twenty miles from the former place, can have striking and melancholy proofs of this fact. In some places the whole woods, as far as you can see around you, are dead, stripped of the bark, their wintery-looking arms and bare trunks bleaching in the sun, and tumbling in ruins before every blast, presenting a frightful picture of desolation. And yet ignorance and prejudice stubbornly persist in directing their indignation against the bird now before us, the constant and mortal enemy of these very vermin, as if the hand that probed the wound, to extract its cause, should be equally detested with that which inflicted it; or as if the thief-catcher should be confounded with the thief. Until

some effectual preventive, or more complete mode of destruction, can be devised against these insects and their larvæ, I would humbly suggest the propriety of protecting, and receiving with proper feelings of gratitude, the services of this and the whole tribe of Woodpeckers, letting the odium of guilt fall to its proper owners.

The head and bill of this bird is in great esteem among the southern Indians, who wear them by way of amulet or charm as well as ornament; and, it is said, dispose of them to the northern tribes at considerable prices. An Indian believes that the head, skin, or even feathers of certain birds, confer on the wearer all the virtues or excellences of those birds. Thus I have seen a coat made of the skins, heads and claws of the raven; caps stuck round with heads of Butcher-birds, Hawks and Eagles; and as the disposition and courage of the Ivory-billed Woodpecker are well known to the savages, no wonder they should attach great value to it, having both beauty, and, in their estimation, distinguished merit to recommend it.

This bird is not migratory, but resident in the countries where it inhabits. In the low counties of the Carolinas, it usually prefers the large-timbered cypress swamps for breeding in. In the trunk of one of these trees, at a considerable height, the male and female alternately, and in conjunction, dig out a large and capacious cavity for their eggs and young. Trees thus dug out have frequently been cut down, with sometimes the eggs and young in them. This hole, according to information, for I have never seen one myself, is generally a little winding, the better to keep out the weather, and from two to five feet deep. The eggs are said to be generally four, sometimes five, as large as a pullet's, pure white, and equally thick at both ends; a description that, except in size, very nearly agrees with all the rest of our Woodpeckers. The young begin to be seen abroad about the middle of June. Whether they breed more than once in the same season is uncertain.

The food of this bird consists entirely of insects and their

larvæ. The Pileated Woodpecker is suspected of sometimes tasting the Indian corn ; the Ivory-billed never. His common note, repeated every three or four seconds, very much resembles the tone of a trumpet, or the high note of a clarinet, and can plainly be distinguished at the distance of more than half a mile ; seeming to be immediately at hand, though perhaps more than one hundred yards off. This it utters while mounting along the trunk, or digging into it. At these times it has a stately and novel appearance ; and the note instantly attracts the notice of a stranger. Along the borders of the Savannah river, between Savannah and Augusta, I found them very frequently ; but my horse no sooner heard their trumpet-like note, than remembering his former alarm, he became almost ungovernable.

The Ivory-billed Woodpecker is twenty inches long, and thirty inches in extent ; the general color is black, with a considerable gloss of green when exposed to a good light ; iris of the eye vivid yellow ; nostrils covered with recumbent white hairs ; fore part of the head black, rest of the crest of a most splendid red, spotted at the bottom with white, which is only seen when the crest is erected, as represented in the plate ; this long red plumage being ash-colored at its base, above that white, and ending in brilliant red ; a stripe of white proceeds from a point, about half an inch below each eye, passes down each side of the neck, and along the back, where they are about an inch apart, nearly to the rump ; the first five primaries are wholly black, on the next five the white spreads from the tip higher and higher to the secondaries, which are wholly white from their coverts downwards : these markings, when the wings are shut, make the bird appear as if his back were white, hence he has been called, by some of our naturalists, the large White-backed Woodpecker ; the neck is long ; the beak an inch broad at the base, of the color and consistence of ivory, prodigiously strong, and elegantly fluted ; the tail is black, tapering from the two exterior feathers, which are three inches shorter than the middle ones, and each feather has the singularity of being greatly concave

below ; the wing is lined with yellowish white ; the legs are about an inch and a quarter long, the exterior toe about the same length, the claws exactly semicircular and remarkably powerful, the whole of a light blue or lead color. The female is about half an inch shorter, the bill rather less, and the whole plumage of the head black, glossed with green ; in the other parts of the plumage she exactly resembles the male.

The Pileated Woodpecker (*P. Pileatus*) is the second in size among his tribe, and may be styled the Great Northern Chief of the Woodpeckers, though, in fact, his range extends over the whole of the United States, from the interior of Canada to the gulf of Mexico. He is very numerous in the Genesee country, and in all the tracts of high-timbered forests, particularly in the neighborhood of our large rivers, where he is noted for making a loud and almost incessant cackling before wet weather ; flying at such times in a restless manner from tree to tree, making the woods echo to his outcry. In Pennsylvania, and the northern states, he is called the Black Woodcock ; in the southern states, the Logcock. Almost every old trunk in the forest where he resides, bears the marks of his chisel. Wherever he perceives a tree beginning to decay, he examines it round and round with great skill and dexterity, strips off the bark in sheets of five or six feet in length to get at the hidden cause of the disease, and labors with a gayety and activity really surprising. Whether engaged in flying from tree to tree, in digging, climbing, or barking, he seems perpetually in a hurry. He is extremely hard to kill, clinging close to the tree even after he has received his mortal wound : nor yielding up his hold but with his expiring breath. If slightly wounded in the wing, and dropped while flying, he instantly makes for the nearest tree, and strikes, with great bitterness, at the hand stretched out to seize him ; and can rarely be reconciled to confinement. He is sometimes observed among the hills of Indian corn, and it is said by some that he frequently feeds on it. Complaints of this kind are, however, not general ; many farmers doubting the fact, and conceiving that at these times he is in search of

insects which lie concealed in the husk. I will not be positive that they never occasionally taste maize; yet I have opened and examined great numbers of these birds, killed in various parts of the United States, from lake Ontario to the Alatomaha river, but never found a grain of Indian corn in their stomachs.

The Pileated Woodpecker is not migratory, but braves the extremes of both the arctic and torrid regions. Neither is he gregarious, for it is rare to see more than one or two, or at the most three, in company.

Their nest is built, or rather the eggs are deposited, in the hole of a tree, dug out by themselves, no other materials being used but the soft chips of rotten wood. The female lays six large eggs of a snowy whiteness; and, it is said, they generally raise two broods in the same season.

This species is eighteen inches long, and twenty-eight in extent; the general color is a dusky brownish black; the head is ornamented with a conical cap of bright scarlet; two scarlet mustaches proceed from the lower mandible; the chin is white; the nostrils are covered with brownish white hair-like feathers, and this stripe of white passes thence down the side of the neck to the sides, spreading under the wings; the upper half of the wings are white, but concealed by the black coverts; the lower extremities of the wings are black; so that the white on the wing is not seen but when the bird is flying, at which time it is very prominent; the tail is tapering, the feathers being very convex above and strong; the legs are of a leaden gray color, very short, scarcely half an inch, the toes very long, the claws strong and semicircular, and of a pale blue; the bill is fluted, sharply ridged, very broad at the base, bluish black above, below and at the point bluish white; the eye is of a bright golden color; the pupil black; the tongue, like those of its tribe, is worm-shaped, except near the tip, where for one-eighth of an inch it is horny, pointed, and beset with barbs.

The female has the forehead, and nearly to the crown, of a light brown color, and the mustaches are dusky instead of

red. In both, a fine line of white separates the red crest from the dusky line that passes over the eye.

The Golden-Winged Woodpecker (*P. Auratus*) is well known to our farmers and junior sportsmen, who take every opportunity of destroying him ; the former for the supposed trespasses he commits on their Indian corn, or the trifle he will bring in market, and the latter for the mere pleasure of destruction, and perhaps for the flavor of his flesh, which is in general esteem. In the state of Pennsylvania he can scarcely be called a bird of passage, as even in severe winters they may be found within a few miles of the city of Philadelphia ; and I have known them exposed for sale in market every week during the months of November, December, and January, and that too in more than commonly rigorous weather. They, no doubt, partially migrate, even here ; being much more numerous in spring and fall than in winter. Early in the month of April they begin to prepare their nest, which is built in the hollow body or branch of a tree, sometimes, though not always, at a considerable height from the ground. The sagacity of this bird in discovering, under a sound bark, a hollow limb or trunk of a tree, and its perseverance in perforating it for the purpose of incubation, are truly surprising ; the male and female alternately relieving and encouraging each other by mutual caresses, renewing their labors for several days, till the object is attained, and the place rendered sufficiently capacious, convenient and secure. At this employment they are so extremely intent, that they may be heard till a very late hour in the evening, thumping like carpenters. I have seen an instance where they had dug first five inches straight forward, and then downwards more than twice that distance, through a solid black oak. They carry in no materials for their nest, the soft chips, and dust of the wood, serving for this purpose. The female lays six white eggs, almost transparent. The young early leave the nest, and, climbing to the higher branches, are there fed by their parents.

The food of this bird varies with the season. As the com-

mon cherries, bird-cherries, and berries of the sour gum, successively ripen, he regales plentifully on them, particularly on the latter; but the chief food of this species, or that which is most usually found in his stomach, is wood-lice, and the young and larvæ of ants, of which he is so immoderately fond, that I have frequently found his stomach distended with a mass of these, and these only, as large nearly as a plum. For the procuring of these insects, nature has remarkably fitted him. The bills of Woodpeckers, in general, are straight, grooved or channelled, wedge-sharped, and compressed to a thin edge at the end, that they may the easier penetrate the hardest wood; that of the Golden-winged Woodpecker is long, slightly bent, ridged only on the top, and tapering almost to a point, yet still retaining a little of the wedge form there. Both, however, are admirably adapted to the peculiar manner each has of procuring its food. The former, like a powerful wedge, to penetrate the dead and decaying branches, after worms and insects; the latter, like a long and sharp pick axe, to dig up the hillocks of pismires, that inhabit old stumps in prodigious multitudes. These beneficial services would entitle him to some regard from the husbandman, were he not accused, and perhaps not without just cause, of being too partial to the Indian corn, when in that state which is usually called *roasting-ears*. His visits are indeed rather frequent about this time; and the farmer, suspecting what is going on, steals through among the rows with his gun, bent on vengeance, and forgetful of the benevolent sentiment of the poet—that

“———Just as wide of *justice* he must fall
Who thinks all made for One, not one for all.”

But farmers, in general, are not much versed in poetry, and pretty well acquainted with the value of corn, from the hard labor requisite in raising it.

In rambling through the woods one day, says Wilson, I happened to shoot at one of these birds, and wounded him slightly in the wing. Finding him in full feather, and seem-

ingly but little hurt, I took him home, and put him into a large cage, made of willows, intending to keep him in my own room, that we might become better acquainted. As soon as he found himself enclosed on all sides, he lost no time in idle fluttering, but throwing himself against the bars of the cage, began instantly to demolish the willows, battering them with great vehemence, and uttering a loud piteous kind of cackling, similar to that of a hen when she is alarmed, and takes to wing. Poor Baron Trench never labored with more eager diligence at the walls of his prison, than this son of the forest in his exertions for liberty ; and he exercised his powerful bill with such force, digging into the sticks, seizing and shaking them so from side to side, that he soon opened for himself a passage ; and though I repeatedly repaired the breach, and barricadoed every opening in the best manner I could, yet on my return into the room, I always found him at large, climbing up the chairs, or running about the floor ; where, from the dexterity of his motions, moving backwards, forwards, and side ways, with the same facility, it became difficult to get hold of him again. Having placed him in a strong wire cage, he seemed to give up all hopes of making his escape, and soon became very tame ; fed on young ears of Indian corn ; refused apples, but ate the berries of the sour gum greedily, small winter grapes, and several other kinds of berries ; exercised himself frequently in climbing, or rather hopping perpendicularly along the sides of the cage ; and as evening drew on, fixed himself in a high hanging or perpendicular position, and slept with his head in his wing. As soon as dawn appeared, even before it was light enough to perceive him distinctly across the room, he descended to the bottom of the cage, and began his attack on the ears of Indian corn, rapping so loud as to be heard from every room in the house. After this he would sometimes resume his former position, and take another nap. He was beginning to become very amusing, and even sociable, when, after a lapse of several weeks, he became drooping, and died, as I conceived, from the effects of his wound.

Some European naturalists, (and among the rest Linnæus himself, in his tenth edition of the *Systema Naturæ*,) have classed this bird with the genus *Cuculus*, or Cuckoo; informing their readers that it possesses many of the habits of the Cuckoo; that it is almost always on the ground; is never seen to climb trees like the other Woodpeckers, and that its bill is altogether unlike theirs; every one of which assertions I must say is incorrect, and could have only proceeded from an entire unacquaintance with the manners of the bird. Except in the article of the bill, and that, as has been before observed, is still a little wedge-formed at the point, it differs in no one characteristic from the rest of its genus. Its nostrils are covered with tufts of recumbent hairs or small feathers; its tongue is round, worm-shaped, flattened towards the tip, pointed, and furnished with minute barbs; it is also long, missile, and can be instantaneously protruded to an uncommon distance. The *os hyoides*, or internal parts of the tongue, like those of its tribe, is a substance for strength and elasticity resembling whalebone, divided into two branches, each the thickness of a knitting-needle, that pass, one on each side of the neck, to the hind-head, where they unite, and run up along the skull in a groove, covered with a thin membrane or sheath; descend into the upper mandible by the right side of the right nostril, and reach to within half an inch of the point of the bill, to which they are attached by another extremely elastic membrane, that yields when the tongue is thrown out, and contracts as it is retracted. In the other Woodpeckers we behold the same apparatus, differing a little in different species. In some these cartilaginous substances reach only to the top of the cranium; in others they reach to the nostril; and in one species they are wound round the bone of the right eye, which projects considerably more than the left for its accommodation.

The tongue of the Golden-winged Woodpecker, like the others, is also supplied with a viscid fluid, secreted by two glands that lie under the ear on each side, and are at least five times larger in this species than in any other of its size;

with this the tongue is continually moistened, so that every small insect it touches instantly adheres to it. The tail, in its strength and pointedness, as well as the feet and claws, prove that the bird was designed for climbing; and in fact I have scarcely ever seen it on a tree five minutes at a time without climbing; hopping not only upwards and downwards, but spirally; pursuing and playing with its fellow, in this manner, round the body of the tree. I have also seen them a hundred times alight on the trunk of the tree; though they more frequently alight on the branches; but that they climb, construct like nests, lay the same number, and the like colored eggs, and have the manners and habits of the Woodpeckers, is notorious to every American naturalist; while neither in the form of their body, nor any other part, except in the bill being somewhat bent, and the toes placed two before, and two behind, have they the smallest resemblance whatever to the Cuckoo.

It may not be improper, however, to observe, that there is another species of Woodpecker, called also Golden-winged, which inhabits the country near the Cape of Good Hope, and resembles the present, it is said, almost exactly in the color and form of its bill, and in the tint and markings of its plumage; with this difference, that the mustaches are red instead of black, and the lower side of the wings, as well as their shafts, are also red, where the other is golden yellow. It is also considerably less. With respect to the habits of this new species, we have no particular account; but there is little doubt that they will be found to correspond with the one we are now describing.

The abject and degraded character which the count de Buffon, with equal eloquence and absurdity, has drawn of the whole tribe of Woodpeckers, belongs not to the elegant and sprightly bird now before us. How far it is applicable to any of them will be examined hereafter. He is not "constrained to drag out an insipid existence in boring the bark and hard fibres of trees to extract his prey," for he frequently finds in the loose mouldering ruins of an old stump, (the capital of a

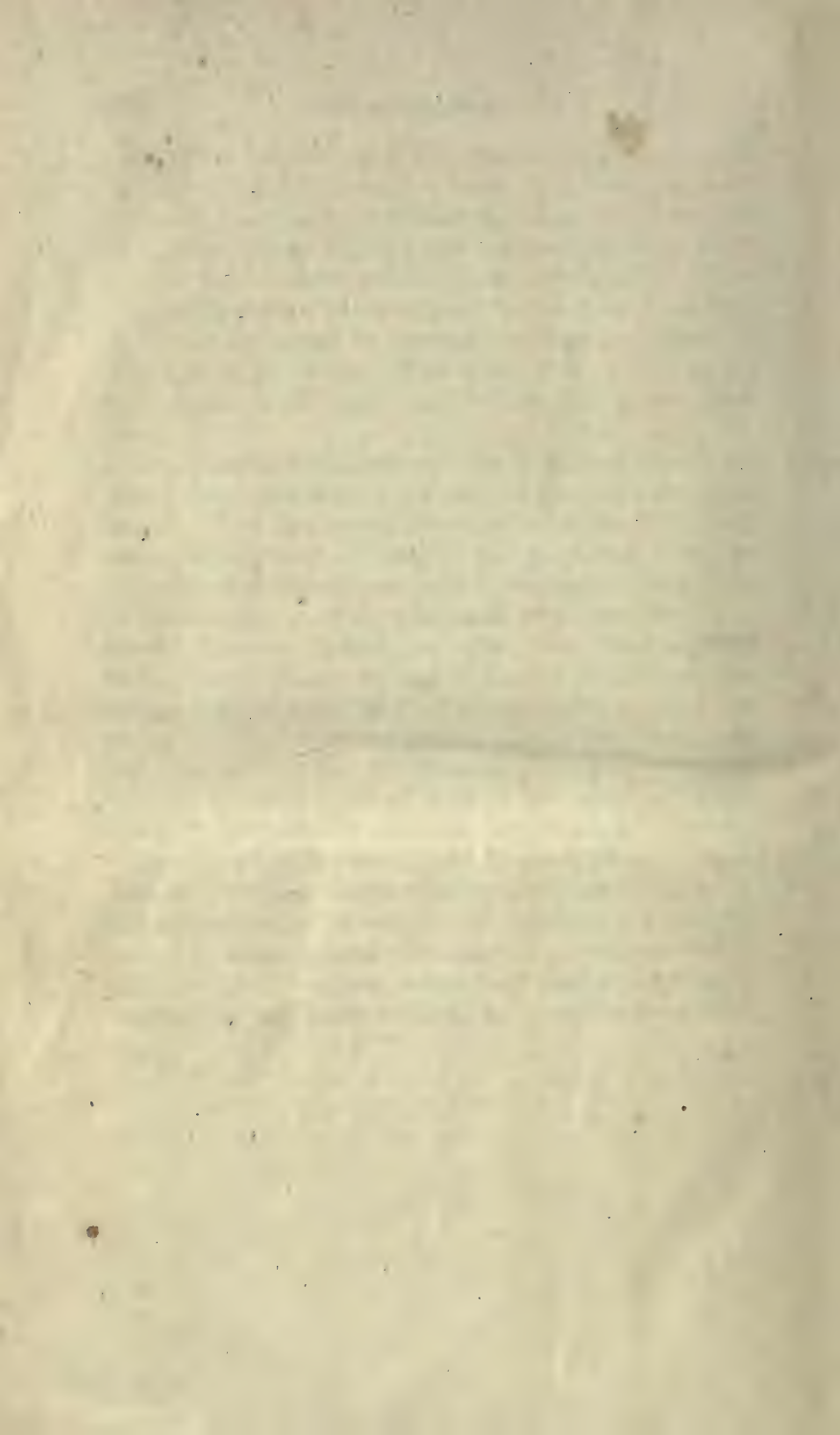
nation of pismires) more than is sufficient for the whole week. *He* cannot be said to "lead a mean and gloomy life, without an intermission of labor," who usually feasts by the first peep of dawn, and spends the early and sweetest hours of morning, on the highest peaks of the tallest trees, calling on his mate or companions; or pursuing and gamboling with them round the larger limbs, and body of the tree, for hours together; for such are really his habits. Can it be said that "necessity never grants an interval of sound repose" to that bird, who, while other tribes are exposed to all the peltings of the midnight storm, lodges dry and secure in a snug chamber of a tree of his own constructing? or that "the narrow circumference of a tree circumscribes *his* dull round of life," who, as seasons and inclination inspire, roams from the frigid to the torrid zone, feasting on the abundance of various regions.

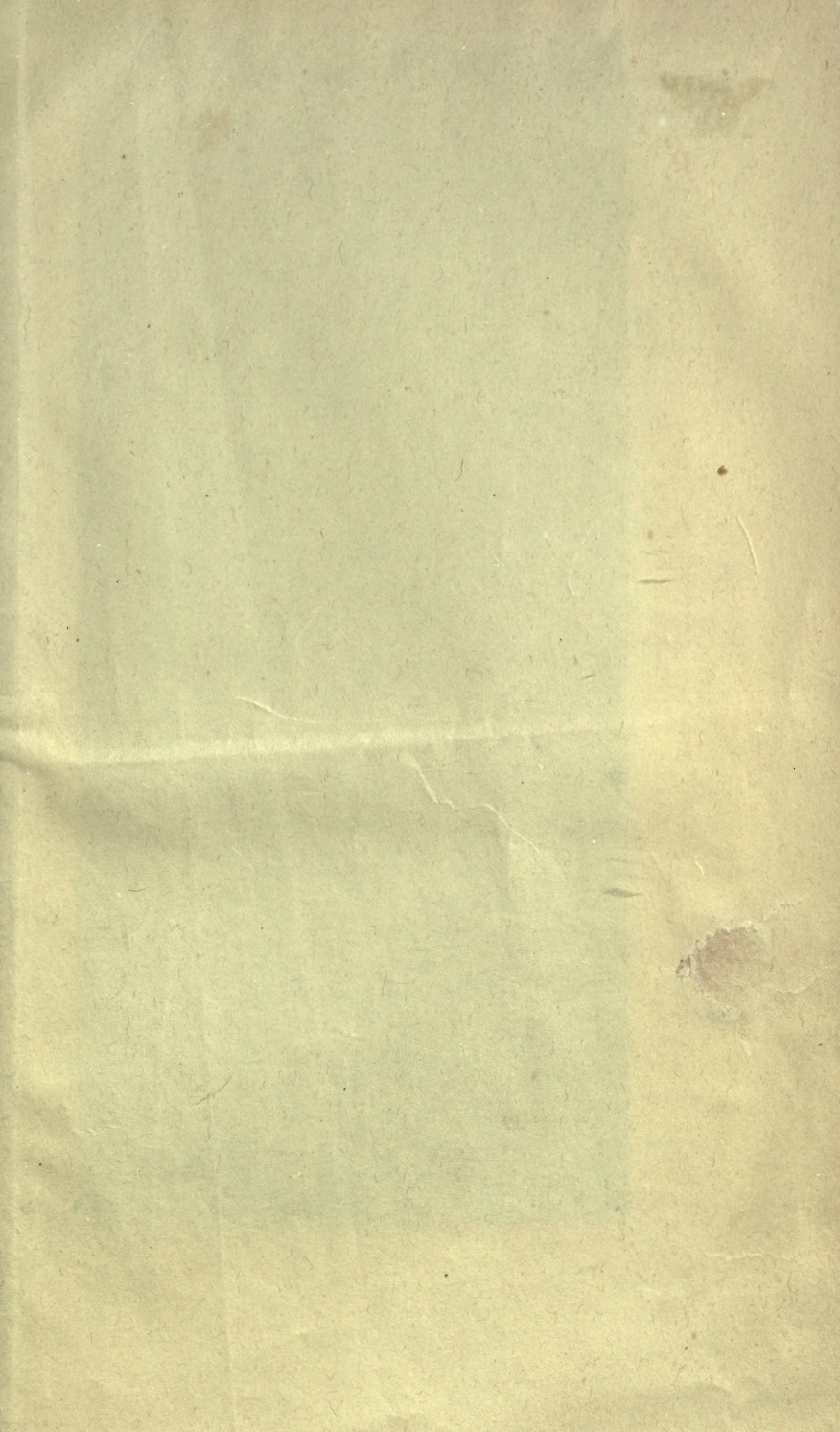
The Golden-winged Woodpecker has the back and wings above of a dark umber, transversely marked with equidistant streaks of black; upper part of the head an iron gray; cheeks and parts surrounding the eyes, a fine cinnamon color; from the lower mandible a stripe of black, an inch in length, passes down each side of the throat, and a lunated spot, of a vivid blood red, covers the hindhead, its two points reaching within half an inch of each eye; the sides of the neck, below this, incline to a bluish gray; throat and chin a very light cinnamon or fawn color; the breast is ornamented with a broad crescent of deep black; the belly and vent white, tinged with yellow, and scattered with innumerable spots of black, every feather having a distinct central spot, those on the thighs and vent being heart-shaped and largest; the lower or inner side of the wing and tail, shafts of all the larger feathers, and indeed of almost every feather, are of a beautiful golden yellow—that on the shafts of the primaries being very distinguishable, even when the wings are shut; the rump is white, and remarkably prominent; the tail-coverts white, and curiously serrated with black; upper side of the tail, and the tip below, black, edged with light loose filaments of a cream color, the two exterior feathers serrated with whitish; shafts black

towards the tips, the two middle ones nearly wholly so; bill an inch and a half long, of a dusky horn color, somewhat bent, ridged only on the top, tapering, but not to a point, that being a little wedge-formed; legs and feet light blue; iris of the eye hazel; length twelve inches, extent twenty. The female differs from the male chiefly in the greater obscurity of the fine colors, and in wanting the black mustachès on each side of the throat. This description, as well as the drawing, was taken from a very beautiful and perfect specimen.

Though this species, generally speaking, is migratory, yet they often remain with us in Pennsylvania during the whole winter. They also inhabit the continent of North America, from Hudson's Bay to Georgia; and have been found, by voyagers, on the north west coast of America. They arrive at Hudson's Bay in April, and leave it in September. Mr. Hearne, however, informs us, that "the Golden-winged Woodpecker is almost the only species of Woodpecker that winters near Hudson's Bay." The natives there call it *Ou-thee-quan-nor-ow*, from the golden color of the shafts and lower side of the wings. It has numerous provincial appellations in the different states of the Union, such as "High-hole," from the situation of its nest, and "Hittock," "Yucker," "Piut," "Flicker," by which last it is usually known in Pennsylvania. These names have probably originated from a fancied resemblance of its notes to the sound of the words; for one of its most common cries consists of two notes or syllables, frequently repeated, which, by the help of the hearer's imagination, may easily be made to resemble any or all of them.







RETURN BIOSCIENCE & NATURAL RESOURCES LIBRARY
TO → 2101 VALLEY LIFE SCIENCES BLDG. 642-2531

LOAN PERIOD 1	2	3
4	5	6

ONE MONTH LOAN

ALL BOOKS MAY BE RECALLED AFTER 7 DAYS

DUE AS STAMPED BELOW

FORM NO. DD0, 50m, 11/94

UNIVERSITY OF CALIFORNIA, BERKELEY
BERKELEY, CA 94720

U. C. BERKELEY LIBRARIES



C055444667

M85607

QL50

S8

v.2

BIOLOGY
LIBRARY

THE UNIVERSITY OF CALIFORNIA LIBRARY

